DOCUMENT RESUME

ED 113 288 95 SP 009 213

AUTHOR Soar, Robert S.
TITLE Follow Through Classroom Process Measurement.
INSTITUTION Florida Univ., Gainesville. Inst. for Development of Human Resources.
SPONS AGENCY Florida Educational Research and Development Council, Gainesville.; Office of Education (DHEW), Washington, D.C.
PUB DATE Jun 71
GRANT OEG-0-8-522394-3991(286); OEG-0-8-522471-4618(100)
NOTE 177p.; For related document, see ED 106 297
AVAILABLE FROM Institute for Development of Human Resources, College of Education, University of Florida, Gainesville, Florida 32601 (No price quoted)

EDRS PRICE MF-$0.76 HC-$9.51 Plus Postage
DESCRIPTORS Class Management; *Classroom Observation Techniques; *Classroom Techniques; Disadvantaged Youth; Elementary Education; *Evaluation; Factor Analysis; *Measurement; Student Development; Student Teacher Relationship; *Teacher Behavior; Testing
IDENTIFIERS Florida; *Project Follow Through

ABSTRACT

This report presents a portion of the evaluation of the planned variation of Project Follow Through, in which increased understanding of education which is functional for disadvantaged children has been a major concern. This segment of the evaluation has the following two objectives: (1) to describe in behavioral terms the differences among programs as observed in classrooms, and (2) to relate these dimensions to pupil growth. Observation was carried out in classrooms from each of seven programs and a comparison sample. Observers recorded such things as the teacher's classroom management techniques, expression of affect, the social-emotional nature, and the cognitive level of the interaction. Results were then factor analyzed, reduced to factor scores, and the factor scores tested for differences between programs by the multiple range test. The factor scores were also related to classroom mean pupil regressed gain which had been factored to identify different levels of complexity. Although there were inconsistencies, the linear relations between the classroom measures and pupil gain suggested that some factors, such as effective personal communication and intrinsic motivation, related to all levels of complexity, while others were specific to a certain level. In general, there seemed to be a trend that abstract growth was related to teaching that was less controlled and less focused but had some structure, while skill growth was related to more focus and structure, with concrete growth positively related to still more highly focused teacher behaviors and negatively related to extreme pupil freedom. (Author/RC)

Documents acquired by ERIC include many informal unpublished materials not available from other sources. ERIC makes every effort to obtain the best copy available. Nevertheless, items of marginal reproducibility are often encountered and this affects the quality of the microfiche and hardcopy reproductions ERIC makes available via the ERIC Document Reproduction Service (EDRS). EDRS is not responsible for the quality of the original document. Reproductions supplied by EDRS are the best that can be made from the original.

ED113288

FOLLOW THROUGH CLASSROOM PROCESS MEASUREMENT*

By

Robert S. Soar

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

INSTITUTE FOR DEVELOPMENT OF HUMAN RESOURCES

COLLEGE OF EDUCATION
UNIVERSITY OF FLORIDA
GAINESVILLE, FLORIDA 32611

June, 1971

*This research was performed under contract OEG-0-8-522471-4618(100) from the Office of Education, Department of Health, Education and Welfare to the University of Florida, and OEG-0-8-522394-3991(286) to the Florida Educational Research and Development Council, Gainesville, Florida. The opinions expressed do not necessarily reflect the position or policy of OE, and no official endorsement should be inferred.

SP009 213

Acknowledgments

In any project, the help of many people is required. But when that help is given enthusiastically and unstintingly, special thanks are due. That was the case in this project.

Ruth Soar has been codirector in every way but in name, collaborating in application and report writing, wrestling with budgets, collecting data, planning and programming data analyses, and interpreting the results. Marjorie Ragosta has been central in the work of the project since its beginning. She has served as observer, coder and observer trainer and supervisor, data processor, field supervisor and project manager. She has organized and coordinated the work of field staff and coders, and coordinated the project with school systems. Mary Webb has been observer and provided valuable "back up" as trainer, supervisor and "house mother" to the staff of student coders who worked diligently to decipher tapes which were sometimes difficult.

Other observers who have often worked days and traveled nights were: Bill Blair, Pat Quigley, Sister Maura Smith, Kathy Gussow, Judy Godfrey, and Linda Stebbins.

The data processing was coordinated by Linda Stebbins, supported by Keith Brown, Earl Blekking, and Bill Graves. Jan Larson, Barbie Hollien, and Denise Stevens have dealt with the myriad administrative and clerical details that accompanied the project.

Finally, Follow Through coordinators and school system supervisors have smoothed the way, planning schedules and arranging with teacher for our visits. They and their principals have welcomed us and made us feel at home. But the real heroes in the front lines have been the teachers, who despite the many demands on their time and energy, have welcomed us into their classrooms, and

given us the freedom to gather the most meaningful picture of the classroom we had the skill to record.

To all, a heartfelt thanks!

July 7, 1971

Robert S. Soar
Gainesville, Fla.

Contents

Acknowledgments v
Tables ix
Figures xii

Introduction 1

Procedure 1

Sample 1

Classroom Observation Measures 5
Florida Affective Categories (FLAC) and Florida Climate and Control System (FLACCS) 5
Teacher Practices Observation Record 13
Florida Taxonomy of Cognitive Behavior 20
Reciprocal Category System 26

Observers and Training 29

Observer Effects 32

Analysis of Observational Data 34

Analysis of Pupil Data 38

Results 40

Pupil Regressed Gain Measures 40
Achievement Data, 1969 40
Achievement Data, 1970 40
Self-Concept Data, 1969-1970 50

Observational Measures and Their Relation to Pupil Growth . . . 51
Teacher Practices Observation Record (TPOR) 51
Florida Affective Categories (FLAC) -1969 63
Florida Climate and Control System (FLACCS)-1970 72
Reciprocal Category System 83
Cognitive Taxonomy (CogTax) 97
Relations of Ratings With Pupil Growth Measures 107
Nonlinear Relations Between Observational Measures and Pupil Growth 111

Contents (Continued)

Discussion 115

Program Discrimination 115

Pupil Growth Data 116

Relations Between Observational Data and Pupil Growth 117

References 121

Appendices

A. Equipment for Classroom Tape Recording 123

B. Statistical Procedures Used in Calculating Pupil Gain Measures 124

C. Pupil Data Status - 1970 Sample 129

D. Program Descriptive Data 130

E. Reciprocal Category Measures 165

List of Tables

Table		Page
1.	Sample by Program and Community - 1969	3
2.	Sample by Program and Community - 1970	4
3.	Factor Analyses of Kindergarten and First Grade Regressed Gain Scores - 1969	41
4.	Fall and Spring Standings for Four Kindergarten Subgroups on A Priori Composite Scores	42
5.	t-tests for the Regression Coefficients of Pretest on Raw Gain Scores	44
6.	Factor Analyses of Kindergarten and Entering First Grade Regressed Gain Scores - 1970	45
7.	Items Combined Into Subscores for Nonentering First Grade, 1970	48
8.	Correlations Between Subscores for Nonentering First Grade	49
9.	Teacher Practices Observation Record Multiple Range Tests of Program Discriminations	52
10.	Correlations of TPOR Factors with Pupil Growth	53
11.	Correlations of Teacher Practices Observation Record Factors with Nonentering First Grade Pupil Growth	54
12.	Teacher Practices Observation Record - Factor 1	56
13.	Teacher Practices Observation Record - Factor 2	57
14.	Teacher Practices Observation Record - Factor 3	59
15.	Teacher Practices Observation Record - Factor 4	59
16.	Teacher Practices Observation Record - Factor 5	61
17.	Teacher Practices Observation Record - Factor 6	62
18.	Correlation of Florida Affective Categories with Pupil Growth Scores and Multiple Range Test Program Discriminations - 1969	64
19.	Florida Affective Categories System - Factor 1	66

List of Tables (Continued)

Table		Page
20	Florida Affective Categories System - Factor 2	67
21.	Florida Affective Categories System - Factor 3	67
22.	Florida Affective Categories System - Factor 4	69
23.	Florida Affective Categories System - Factor 5	69
24.	Florida Affective Categories System - Factor 6	70
25.	Correlations of Florida Climate and Control System (1970) with Pupil Growth Scores and Multiple Range Test Program Discriminations	73
26.	Correlations of Florida Climate and Control System (1970) with Nonentering First Grade Growth Scores	74
27.	Florida Climate and Control System - Factor 1	76
28.	Florida Climate and Control System - Factor 2	77
29.	Florida Climate and Control System - Factor 3	78
30.	Florida Climate and Control System - Factor 4	78
31.	Florida Climate and Control System - Factor 5	80
32.	Florida Climate and Control System - Factor 6	80
33.	Florida Climate and Control System - Factor 7	82
34.	Reciprocal Category System - Multiple Range Tests of Program Discrimination	84
35.	Correlations of Reciprocal Category System with Pupil Growth Factors	85
36.	Correlations of Reciprocal Category System (1970) with Non-entering First Grade Growth Scores	86
37.	Reciprocal Category System - Factor 1	87
38.	Reciprocal Category System - Factor 2	89

List of Tables

Table		Page
1	Sample by Program and Community - 1969	3
2.	Sample by Program and Community - 1970	4
3.	Factor Analyses of Kindergarten and First Grade Regressed Gain Scores - 1969	41
4.	Fall and Spring Standings for Four Kindergarten Subgroups on A Priori Composite Scores	42
5.	t-tests for the Regression Coefficients of Pretest on Raw Gain Scores	44
6.	Factor Analyses of Kindergarten and Entering First Grade Regressed Gain Scores - 1970	45
7.	Items Combined Into Subscores for Nonentering First Grade, 1970	48
8.	Correlations Between Subscores for Nonentering First Grade	49
9.	Teacher Practices Observation Record Multiple Range Tests of Program Discriminations	52
10.	Correlations of TPOR Factors with Pupil Growth	53
11.	Correlations of Teacher Practices Observation Record Factors with Nonentering First Grade Pupil Growth	54
12.	Teacher Practices Observation Record - Factor 1	56
13.	Teacher Practices Observation Record - Factor 2	57
14.	Teacher Practices Observation Record - Factor 3	59
15.	Teacher Practices Observation Record - Factor 4	59
16.	Teacher Practices Observation Record - Factor 5	61
17.	Teacher Practices Observation Record - Factor 6	62
18.	Correlation of Florida Affective Categories with Pupil Growth Scores and Multiple Range Test Program Discriminations - 1969	64
19.	Florida Affective Categories System - Factor 1	66

List of Figures

1. Florida Affective Categories (FLAC), 1969 6

2. Classroom Global Ratings, 1969 11

3. Florida Climate and Control System (FLACCS), 1970 14

4. Teacher Practices Observation Record 18

5. Florida Taxonomy of Cognitive Behavior, 1969-70 23

6. Summary of Categories for the Reciprocal Category System 27

7. Relation Between Teacher Practices Observation Record Factor 1 and Pupil Growth 113

8. Florida Climate and Control System. Factor 6 Related to Non-entering First Grade Growth 114

Introduction

As part of the evaluation of project Follow Through, the Institute for Development of Human Resources of the University of Florida (IDHR) assumed responsibility for collecting observational data in a sample of classrooms representing a number of experimental programs. Three waves of data have been collected: 70 classrooms each in the winters of 1969 and 1970; and 289 in the winter of 1971. The results for the first two years are reported here.

Two sets of goals lay behind this effort:

1. To describe in behavioral terms the differences among the programs as observed in the classrooms, and
2. To relate these behavioral dimensions to pupil growth.

As work advanced toward these goals, several subgoals emerged and will be described later.

The observational measures were not focused directly on the identification of sponsor objectives and the development of items to represent them. Rather, they were selected from already existing instruments and represented a broad conception of classroom interaction as it has been developed over the past years. The instruments ranged from one with very extensive research background to two with some previous use, to one which was newly developed from work of others.

To enable study of relations between measures of classroom observation and pupil growth, Stanford Research Institute (SRI), the principal outside evaluator of Follow Through procedure, provided test data on pupils.

Procedure

Sample

Seven programs were selected in which at least eight classrooms could be observed which seemed to represent the diversity of programs present in Follow Through (although the latter criterion was a subjective and uncertain one).

Two comparison classrooms were selected from the same settings in which the programs were located, in the hope of equating, in a rough way, system-related variance for program and comparison classrooms. Insofar as possible, settings and programs were selected for observation where SRI was collecting complete data from pupils.

Each year a total of 70 classrooms was observed: eight program and two comparison classrooms from each of seven programs. The second year the attempt was made to observe the same teachers as far as possible. Exceptions to this were numerous, however, as a consequence of teacher resignations and promotions and, in one case, the need to replace an entire community which had been sampled the first year. The programs and the locations for the samples for the two years are shown in Tables 1 and 2. The way in which the sample was selected sets two limitations on the meaningfulness of the results. One limitation is that SRI collected data in classrooms suggested by program sponsors as ones in which the program was being well implemented. This designation was made by sponsors at the beginning of the first year and on the basis of little information, and in some cases the selection turned out later not to have been the best choice. The other limitation, a function both of sample and of schedule, was that the programs had been in operation in some of these locations for only about three months at the time the first year's observation began. As a consequence, some classrooms did not represent their programs well, and some programs had had relatively little time to become well implemented at the time of data collection.

On the other hand, this situation was not as atypical as it may seem. Experience the second year indicated that it was not unusual for half of the teachers in a program to be replaced because of resignations and promotions.

Table 1

Sample by Program and Community - 1969

Community	Bank Street	Becker Engel-mann	Educ. Devel. Center	Gotkin	Nim-nicht	Parent Educ.	Tucson
Atlanta, Ga.				4+2*			
Berkeley, Calif.					3+1		
Burlington, Vt.			2				
Cleveland, Ohio					2+1		
Duval Co. (Jax), Fla.						2+1	
Duluth, Minn.					3		
East St. Louis, Ill.		3+1					
Ft. Worth, Texas							3
Jonesboro, Ark.						3	
LaFayette, Ga.							3+1
Laurel, Delaware			2+1				
New York City				4			
Philadelphia, Pa.	3+1		4+1			3+1	
Racine, Wis.		4+1					
Rochester, N. Y.	2+1						
Tuskegee, Ala.	3						
Vincennes, Ind.							2+1
Washington, D. C.		1					
Program Total	8	8	8	8	8	8	8
Comparison Total	2	2	2	2	2	2	2

*The second entry represents number of comparison classrooms.

Table 2

Sample by Program and Community - 1970

Community	Bank Street	Becker Engel-mann	Educ. Devel. Center	Gotkin	Nim-nicht	Parent Educ.	Tuscon
Atlanta, Ga.				4+2*	3+		
Berkeley, Calif.					3+1		
Burlington, Vt.			2+1				
Duval Co. (Jax), Fla.						2+1	
Duluth, Minn.					3		
East St. Louis, Ill.		3+1					
Ft. Worth, Texas							3
Jonesboro, Ark.						3	
LaFayette, Ga.							3-1
Laurel, Delaware			2				
Lebanon, N. H.					2+1		
New York City				4			
Philadelphia, Pa.	3		4+1			3+1	
Racine, Wis.		3+1					
Rochester, N. Y.	2+1						
Tuskegee, Ala.	3+1						
Uvalde, Texas		2					
Vincennes, Ind.							2+1
Program Total	8+2	8+2	8+2	8+2	8+2	8+2	8+2
Teachers observed both years	1+0	3+0	8+1	6+2	1+0	8+0	0+1

*The second entry represents number of comparison classrooms.

Since many programs were approximately doubling each year at that point, three-quarters of the teachers in a program were new in many cases.

Classroom Observation Measures

Florida Affective Categories (FLAC) and Florida Climate and Control System (FLACCS) - FLAC (Figure 1), which was used the first of the two years, was a modification of the South Carolina Observation Records, which was developed to be used as a parallel observation schedule with Interaction Analysis (Soar, 1966). The original instrument drew heavily on the Hostility-Affection Schedule (Fowler, 1962), and the earlier versions of the Observation Schedule and Record (Medley and Mitzel, 1958, private communication). The rationale of the instrument, overall, was the development of a schedule which would emphasize behavior which Interaction Analysis did not record. Among these were the nonverbal expression of affect in the classroom, physical movement of teacher and pupils, the groupings found in the classroom, and the extent to which individuals or groups were central in classroom activities. The nonverbal affect expression in the classroom seemed important to observe for two reasons: it seemed reasonable to assume that the teacher might be more successful in monitoring her verbal behavior than her nonverbal behavior when an observer was present (some evidence in earlier studies indicated this); and that relations between pupils might be an indicator of the emotional and social climate of the classroom which would be less likely to change with the presence of an observer than teacher behavior.

The Hostility-Affection Schedule allotted separate sections to the eight combinations of behavior: teacher-pupil, verbal-nonverbal, and supportive-non-supportive. If, for example, the teacher raps on her desk for order, pushes a child who is out of line, or waits impatiently for whispering to stop before proceeding, it would be tallied as teacher, nonverbal, nonsupportive. On the

Figure 1 - Florida Affective Categories (FLAC), 1969
(Class Form)

Teacher _____ Grade _____ Observation Number _____

School _____ City _____

Date _____ Hour _____

Children's Original Art Work

Abundance of varied and vivid art-work	Quite a few varied and vivid art products	Some children's varied and vivid art products	A few children's original varied and vivid art products	No children's original art products
5	4	3	2	1

Room Displays and Artifacts

Most are clearly related to children's subcultural background	Quite a few are related to children's subcultural background	Some are related to children's subcultural background	A few are related to children's subcultural background	None show any relationship to children's subcultural background
5	4	3	2	1

Figure 1 - Continued

Tot	1	2	3	Teacher
				Leads singing, exercise, games
				Leaves, enters room
				Moves freely
				Withdraws from class
				Supervises pupil closely
				Immobilizes pupils
				Pnshs. class for ind. pupil
				Ignores pupil
				Refuses to attend pupil
				Attends pupil briefly
				Attends pupils in succession
				Attends pupil closely
				Attends simult. activities
				Meets pupil's needs
				Directs with song or music

Groupings								
Task					Social			
Tot	1	2	3		1	2	3	Tot
				2-3 P W/A				
				2-3 P W/o A				
				4-1/2 class W/A				
				4-1/2 class W/o A				
				1/2 class + W/A				
				1/2 class + W/o A				
				P. as Ind. W/A				
				P. as Ind. W/o A				

Pupil	1	2	3	Tot
Seeks information				
Gives information				
Follows cognitive plan, T. pblm.				
Follows cognitive plan, P. pblm.				
Absorbed in work				
Intermittent work				
Task-related movement				
Aimless wandering				
Leaves, enters room				
Withdrawn (ignores others)				
Shy, timid (watches others)				
Being near, following				
Seeks reassurance, support				
Parallel play				
Work with socialization				
Collaborative work or play				
Plays verbal game				
Talks to self				
Talks to others				
Adult work (P. init.)				
Adult work (T. init.)				
Corrects others				
Pretends adult				
Copies adult				
"Me too"-copies child				
Central-telling, showing				
Central group				
"Fiddles with" materials				
Uses materials				
Uses play object as itself				
Pretends play object is something else				

Figure 1 - Continued

Negative Affect

Tot	Verbal 1	2	3	Teacher	Non-Verbal	1	2	3	Tot
				Says "stop it" etc.	Waits for child				
				Uses threatening tone	Frowns				
				Rejects child	Ignores child				
				Blames	Points finger				
				Criticizes	Shakes finger				
				Makes threat	Pushes or pulls				
				Humiliates	Spanks				
				Yells	Other				
				Other					

Tot	Verbal 1	2	3	Pupil	Non-Verbal	1	2	3	Tot
				Says "no" etc.	Makes face				
				Teases	Frowns, pouts, withdraws				
				Laughs	Uncooperative, resistant				
				Tattles	Interferes				
				Commands or demands	Threatens				
				Makes disparaging remark	Takes prop. of another				
				Makes someone "feel small"	Damages prop. of others				
				Finds fault	Picks at child				
				Threatens	Pushes or pulls				
				Blames	Holds				
				Cries	Hits				
				Starts fight	Hurts someone with something				
				Other	Other				

Positive Affect

Tot	Verbal 1	2	3	Teacher	Non-Verbal	1	2	3	Tot
				Says "thank you" etc.	Accepts favors for self				
				Agrees with child	Waits for child				
				Gives individual attention	Gives individual attention				
				Accepts favors	Sympathetic				
				Sympathetic	Listens carefully to child				
				Praises child	Smiles, laughs				
				Draws all into group	Pats, fondles, hugs child				
				Other	Other				

Tot	Verbal 1	2	3	Pupil	Non-Verbal	1	2	3	Tot
				Says "thank you" etc.	Pats, fondles, hugs toy or doll				
				Asks permission in friendly manner	Helpful, shares				
				Agrees with another	Leans close to another				
				Chooses another	Chooses another				
				Offers to compromise, share, cooperate	Smiles, laughs with another				
				Defends another	Does something for someone				
				Enthusiastic, happy	Sympathetic				
				Praises another	Pats, fondles, hugs another				
				Other	Agreeable, cooperative				
					Enthusiastic, happy				
					Other				

Figure 1 - Continued

Pupil Interest-Attention Rating Scale

Observation	Interest general and high	Most pupils interested much of time	About half interested much of time	Occasional pupils interested	Pupils gen. apathetic, uninterested
1	5	4	3	2	1
2	5	4	3	2	1
3	5	4	3	2	1

Overall Emotional-Attitudinal Climate

	Highly Positive	Positive most of the time	Neither Positive nor Negative	Negative Occasionally	Highly Negative
	5	4	3	2	1
	Children appear extremely happy and/or satisfied	Most pupils appear happy and/or satisfied much of time	About half appear happy and/or satisfied much of time	Occasnlly pupils appear happy and/or satis fied	Children appear extremely unhappy and/or dissatisfied
	5	4	3	2	1

Figure 2 - Classroom Global Ratings, 1969

Program _____ School _____

Teacher _____ City _____

Grade _____ Date _____

Observer _____

Pupil Groupings

Fixed and regular for activities	Mostly fixed	Emerge about half the time, Fixed half the time	More often emerge spontaneously	Usually emerge spontaneously
1	2	3	4	5

Pupil Differentiation

Almost always work at activity	Most work at same activity most of the time	Most work at same activity half of the time	Work at different activities more often than not	Usually work at different activities
1	2	3	4	5

Teacher Congruence

Words clearly contradict evident feelings		No feelings expressed; "Accepts & Clarifies"		Completely open expression of feelings
1	2	3	4	5

Teacher Empathy

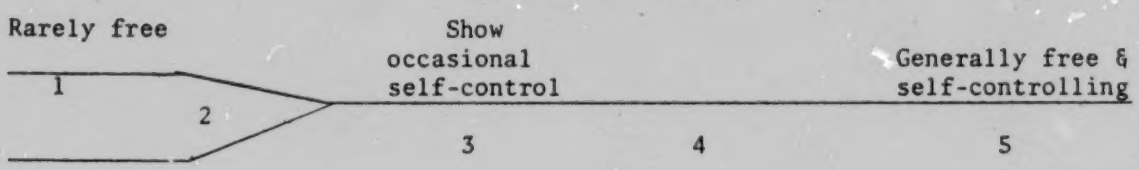
Unaware of conspicuous feeling	Occasionally aware of obvious feeling	Usually aware of obvious feeling	Sometimes aware of subtle feeling	Often aware of subtle feeling
1	2	3	4	5

Figure 2 - Continued

Pupil Reinforcement

From other pupils:	Never	Rarely	Occasionally	Frequently	Almost Constantly
	1	2	3	4	5
From adults:	Almost Constantly	Frequently	Occasionally	Rarely	Never
	5	4	3	2	1
From materials:	Never	Rarely	Occasionally	Frequently	Almost Constantly
	1	2	3	4	5

Pupil Self-Control



Extent to which activities having clear cognitive focus characterize the classroom:

Rarely occur	About 1/4 of the time	About 1/2 of the time	About 3/4 of the time	Occur Almost constantly
1	2	3	4	5

Extent to which "game-like" activities with clear cognitive focus characterize the classroom:

Almost constantly	About 3/4 of the time	About 1/2 of the time	About 1/4 of the time	Rarely occur
5	4	3	2	1

Figure 2 A - Classroom Global Ratings, 1970

Pupil Groupings

Fixed & regular for activities	Mostly fixed	Emerge about half the time; fixed half the time	More often emerge spontaneously	Usually emerge spontaneously
1	2	3	4	5

Pupil Differentiation

Almost always work at same activity	Most work at same activity most of the time	Most work at same activity half of the time	Work at different activities more often than not	Usually work at different activities
1	2	3	4	5

Teacher Congruence

No feelings expressed	Words clearly contradict evident feelings		Some agreement of words and feelings		Words and feelings clearly agree
0	1	2	3	4	5

Teacher Empathy

Unaware of conspicuous feeling	Occasionally aware of obvious feeling	Visually aware of obvious feeling	Sometimes aware of subtle feeling	Often aware of subtle feeling
1	2	3	4	5

Pupil Reinforcement

From other pupils: Never 1 | Rarely 2 | Occasionally 3 | Frequently 4 | Almost constantly 5

From adults: Almost constantly 5 | Frequently 4 | Occasionally 3 | Rarely 2 | Never 1

From materials: Never 1 | Rarely 2 | Occasionally 3 | Frequently 4 | Almost constantly 5

Figure 2 A - Continued

Pupil Self-Control

Pupils:	Rarely show self-control		Occasionally show self-control		Generally show self-control
	1	2	3	4	5

Pupil Freedom

Pupils are:	Rarely free		Occasionally free		Generally free
	1	2	3	4	5

Extent to which activities having clear cognitive focus characterize the classroom:

Rarely occur	About 1/4 of the time	About 1/2 of the time	About 3/4 of the time	Occur almost constantly
1	2	3	4	5

Extent to which "game-like" activities with clear cognitive focus characterize the classroom:

Almost constantly	About 3/4 of the time	About 1/2 of the time	About 1/4 of the time	Rarely occur
5	4	3	2	1

Overall Emotional-Attitudinal Climate

Highly positive	Positive most of the time	Neither positive nor negative	Negative occasionally	Highly negative
5	4	3	2	1

Children appear extremely happy and/or satisfied	Most pupils appear happy and/or satisfied much of time	About half appear happy and/or satisfied much of time	Occasionally pupils appear happy and/or satisfied	Children appear extremely unhappy and/or dissatisfied
5	4	3	2	1

Overall, the number of items was increased, and the question of dividing the instrument in two was considered. This alternative was rejected, however, since much of the affect expressed by adults is used in classroom management, and some portion of pupil affect is interactive with adult control. The instrument is shown in Figure 3.

Teacher Practices Observation Record - The Teacher Practices Observation Record (TPOR) is an instrument developed to measure a teacher's practices in relation to John Dewey's Experimentalism (Brown, 1968). It consists of 62 sign items of teacher behavior (see Figure 4). There are no pedagogically "bad" items on the TPOR; every item describes a teacher behavior that is widely practiced in schools. However, half the items (the even numbers) describe behavior which reflects agreement with Experimentalism and would be espoused by John Dewey; the other half (the odd numbers) reflect disagreement. In the original procedure, the observer's task was to check those items which occurred during three ten-minute observation periods. The time periods used in this project have been limited to five minutes in order to parallel FLAC and FLACCS.

Brown has done extensive research with the instrument, relating it to measures of beliefs, and has shown relations between a teacher's beliefs and teaching practices, and between an observer's beliefs and what he sees in the classroom.

The TPOR provides information which relates to the instructional or pedagogical practices employed in the classroom. The major classifications of items for recording behavior are (a) Nature of the Situation, (b) Nature of the Problem, (c) Development of Ideas, (d) Use of Subject Matter, (e) Evaluation of Pupil's Work, (f) Differentiation of Tasks, and (g) Motivation and Control. Data are produced describing whether the teacher or pupil is the center of

Figure 3

Florida Climate and Control System (FLACCS), 1970*

Institute for the Development of Human Resources
College of Education
University of Florida
Gainesville, Florida

Program:_____ Teacher:_____

City:_____ Grade:_____

School:_____ Date:_____

Team:_____

*This is an experimental instrument developed by Robert S. and Ruth M. Soar, and Marjorie Ragosta, and should not be cited or used without permission.

Figure 3 - Continued

	TOT	1	2	3	Teacher
10					Teacher central
11					Leads singing, games, story
12					Moves freely among pupils
13					Leaves, enters room
14					Withdraws from class
15					Uses blackbd., A-V equip.
16					Ignores pupil
17					Attends pupil briefly
18					Attends pupil closely
19					Attends simult. activities
		1	2	3	Verbal:
20					Calls child by name
21					Directs, without reason
22					Directs, with reason
23					Questions for control
24					Calls on nonvolunteer
25					Interrupts pupil, cuts off
26					Uses time pressure
27					Bribes
28					Threatens, scolds w/conseq.
29					Gives orders, commands
30					Suggests
31					Uses sharp tone
32					Supervises pupil closely
33					Nags
34					Immobilizes pupil
35					Uses sarcasm
36					Scolds, punishes
		1	2	3	
37					Uses self report
38					Questions, states beh. rule
39					Questions for reflect. thgt.
40					Discusses behavior with P.
41					Uses humor
42					Praises
		1	2	3	Nonverbal:
43					Nods, smiles, for control
44					Tolerates deviant behavior
45					Unable to deal w/devt. beh.
46					Gesture, shhh, shakes head
47					Signals, raps, etc.
48					Takes/gives equipment, book
49					Glares, frowns
					Physical intervention:
50					Touches, pats
51					Holds, pushes
52					Punishes (other)
53					Isolates

	TOT	1	2	3	Pupil
10					Pupil Central
11					Pupil -- no choice
12					Pupil -- limited choice
13					Pupil -- free choice
14					(*Seat work without teacher
15					(*Seat work with teacher
16					Leaves, enters room
17					Task-related movement
18					Aimless wandering
		1	2	3	
19					Speaks aloud w/o permission
20					Engages in out-of-bound beh.
21					Collaborates with teacher
22					(*Disobeys directions
23					(*Passive resistance
24					(*Obeys directions
25					Asks permission
26					Follows routine w/o reminder
27					Reports rule to another
28					Gives direction
29					Gives reason
30					Sasses teacher
31					Tattles
		1	2	3	
32					(*Works, plays w/much supv.
33					(*Works, plays w/little supv.
34					Works, plays cooply., collab.
35					Works, plays competit.
36					Seeks reassurance, support
37					Shows pride
38					Shows shame, fear, humil.
39					Shows apathy
		1	2	3	Work Groups
40					Pupil as individual
41					Group with teacher
42					Structured groups
43					Free groups
		1	2	3	Socialization
44					Almost never
45					Occasionally, verbal
46					Frequently, verbal
47					Occasionally, nonverbal
48					Frequently, nonverbal
		1	2	3	Materials
49					Structure teacher behavior
50					Structure pupil behavior
51-52					Pupil interest-attention (Rank 1 low to 5 high)

Figure 3 - Continued

VERBAL AFFECT

	TOT	1	2	3	Teacher Negative
10					Says "stop it", etc.
11					Uses threatening tone
12					Rejects child
13					Blames
14					Criticizes
15					Makes threat
16					Humiliates
17					Yells
18					Uses sarcasm
19					Other

	1	2	3	Pupil Negative
20				Says "no", etc.
21				Teases
22				Laughs
23				Tattles
24				Commands or demands
25				Makes disparaging remks.
26				Makes someone feel small
27				Finds fault
28				Threatens
29				Blames
30				Cries
31				Starts fight
32				Other

	1	2	3	Teacher Positive
33				Says "thank you", etc.
34				Agrees with child
35				Gives individual attent.
36				Accepts favors
37				Sympathetic, warm
38				Praises child
39				Draws all into group
40				Is enthusiastic, congenial

	1	2	3	Pupil Positive
41				Says "thank you", etc.
42				Sounds friendly
43				Agrees with another
44				Chooses another
45				Offers to share, coop.
46				Defends another.
47				Is enthusiastic, happy
48				Praises another
49				Helps another

NONVERBAL AFFECT

	TOT	1	2	3	Teacher Negative
10					Waits for child
11					Frowns
12					Ignores child
13					Points, shakes finger
14					Pushes or pulls, holds
15					Spanks
16					Shows disgust
17					Other

	1	2	3	Pupil Negative
18				Makes face
19				Frowns, pouts, withdraws
20				Uncooperative, resistant
21				Interferes
22				Threatens
23				Takes, damages property of others
24				Picks at child
25				Pushes or pulls, holds
26				Hits
27				Hurts with something
28				Is left out
29				Other

	1	2	3	Teacher Positive
30				Accepts favors for self
31				Waits for child
32				Gives individual Attention
33				Sympathetic, warm
34				Listens carefully to child
35				Smiles, laughs, nods
36				Touches, pats, hugs child
37				Other

	1	2	3	Pupil Positive
38				Helpful, shares
39				Leans close to another
40				Chooses another
41				Smiles, laughs with another
42				Sympathetic
43				Pats, hugs another
44				Agreeable, cooperative
45				Enthusiastic, happy
46				Horseplay

	Ratings	
	Pupil Groupings	
	Pupil Differentiation	
	Teacher Congruence	
	Teacher Empathy	
	Reinfor. from Pupils	
	Reinfor. from Adults	
	Reinfor. from Materials	
	Pupil Self-Control	
	Pupil Freedom	
	Cognitive Focus	
	Game-Like Activities	
	Positive-Neg. Climate	
	Pupils Happy, Satis.	

Figure 4 - Teacher Practices Observation Record*

TOT	I	II	III	TEACHER PRACTICES A. NATURE OF THE SITUATION
				1. T occupies center of attention.
				2. T makes p center of attention.
				3. T makes some thing as a thing center of p's attention.
				4. T makes doing something center of p's attention.
				5. T has p spend time waiting, watching, listening.
				6. T has p participate actively.
				7. T remains aloof or detached from p's activities.
				8. T joins or participates in p's activities.
				9. T discourages or prevents p from expressing self freely.
				10. T encourages p to express self freely.
				B. NATURE OF THE PROBLEM
				11. T organizes learning around Q posed by T.
				12. T organizes learning around p's own problem or Q.
				13. T prevents situation which causes p doubt or perplexity.
				14. T involves p in uncertain or incomplete situation.
				15. T steers p away from "hard" Q or problem.
				16. T leads p to Q or problem which "stumps" him.
				17. T emphasizes idealized, reassuring, or "pretty" aspects of topic.
				18. T emphasizes realistic, disconcerting, or "ugly" aspects of topic.
				19. T asks Q that p can answer only if he studied the lesson.
				20. T asks Q that is not readily answerable by study of lesson.
				C. DEVELOPMENT OF IDEAS
				21. T accepts only one answer as being correct.
				22. T permits p to suggest additional or alternative answers.
				23. T expects p to come up with answer T has in mind.
				24. T asks p to judge comparative value of answers or suggestions.
				25. T expects p to "know" rather than to guess answer to Q.
				26. T encourages p to guess or hypothesize about the unknown or untested.
				27. T accepts only answers or suggestions closely related to topic.
				28. T entertains even "wild" or far-fetched suggestion of p.
				29. T lets p "get by" with opinionated or stereotyped answer.
				30. T asks p to support answer or opinion with evidence.

Figure 4 - Continued

TOT	I	II	III	
				D. USE OF SUBJECT MATTER
				31. T collects and analyzes subject matter for p.
				32. T has p make his own collection and analysis of subject matter.
				33. T provides p with detailed facts and information.
				34. T has p find detailed facts and information on his own.
				35. T relies heavily on textbook as source of information.
				36. T makes a wide range of information material available.
				37. T accepts and uses inaccurate information.
				38. T helps p discover and correct factual errors and inaccuracies.
				39. T permits formation of misconceptions and over-generalizations.
				40. T questions misconceptions, faulty logic, unwarranted conclusions.
				E. EVALUATION
				41. T passes judgment on p's behavior or work.
				42. T withholds judgment on p's behavior or work.
				43. T stops p from going ahead with plan which T knows will fail.
				44. T encourages p to put his ideas to a test.
				45. T immediately reinforces p's answer as "right" or "wrong."
				46. T has p decide when Q has been answered satisfactorily.
				47. T asks another p to give answer if one p fails to answer quickly.
				48. T asks p to evaluate his own work.
				49. T provides answer to p who seems confused or puzzled.
				50. T gives p time to sit and think, mull things over.
				F. DIFFERENTIATION
				51. T has all p working at same task at same time.
				52. T has different p working at different tasks.
				53. T holds all p responsible for certain material to be learned.
				54. T has p work independently on what concerns p.
				55. T evaluates work of all p by a set standard.
				56. T evaluates work of different p by different standards.
				G. MOTIVATION, CONTROL
				57. T motivates p with privileges, prizes, grades.
				58. T motivates p with intrinsic value of ideas or activity.
				59. T approaches subject matter in direct, business-like way.
				60. T approaches subject matter in indirect, informal way.
				61. T imposes external disciplinary control on p.
				62. T encourages self-discipline on part of p.

*Developed by Dr. Bob Burton Brown, Institute for Development of Human Resources, College of Education, University of Florida, Gainesville, Florida.

attention, the extent to which pupils are active or passive, and the amount of freedom which is permitted pupils. The nature of the problem is organized around the concerns of pupils or the concerns of the teacher or textbook, as well as the difficulty of study topics. Information is yielded as to whether ideas are treated in a "hypothetical" or "expository" manner, and whether they are dealt with in a creative or routine fashion. Subject matter is classified as to whether the pupils or the teacher assumes primary responsibility for locating it, whether it is taken from a textbook or a wide range of sources, whether it is accurate or inaccurate. Whether the teacher evaluates the pupils' work or the pupils engage in self-evaluation is recorded. The degree to which the classroom tasks are differentiated for individual pupils is measured, along with the extrinsic-intrinsic nature of the motivation and the type of the disciplinary control.

Florida Taxonomy of Cognitive Behavior - The original instrument was developed by the Florida group under Brown's leadership. Its history originates with The Taxonomy of Educational Objectives: The Cognitive Domain (Bloom and others, 1956), which was modified and extended by Sanders (1966) to provide an instrument to assess teacher lesson plans and teaching materials. The work of the Florida group has consisted of converting Sanders' instrument to one for live observation in the classroom, and of carrying out developmental work with it in classrooms. The levels into which cognitive activity is divided are as follows:

1. Memory. The student is expected to recognize or remember information. He is not expected to compare, relate, or alter the material on his own.

2. Translation. At this level, the student is expected to alter the form of the material with which he is dealing -- figurative to literal, behavioral to verbal, verbal to quantitative, pictorial to verbal, or abstract to concrete -- but not to change or evaluate the ideas represented.
3. Interpretation. The student is expected to identify similarities or differences, to compare on some other basis, to relate supporting evidence to a generalization, or to carry out a specified operation.
4. Application. The student is expected to bring together, without instruction, previously learned material which relates to a problem. Examples would include using word-attack skills to sound out a word, or deciding what mathematical operation is appropriate to solve a problem and carrying it through.
5. Analysis. This category is concerned with consciously applying the rules of thinking or of logic to the analysis of a problem, with inferring feelings or motives.
6. Synthesis. This level involves bringing ideas together, as in application, but with the added requirement that the student reorganizes or changes them in such a way as to produce something new. Original productions of various sorts would be classified here.
7. Evaluation. This level requires two functions: establishing a set of criteria which are relevant to evaluate an idea or a product, and then evaluating the product or idea against these criteria.

In the development of the original instrument, data were collected from approximately 120 teachers using this system in parallel with the Reciprocal

Category System and the Teacher Practices Observation Record. Analysis has indicated meaningful relationships with the other instruments (Wood, 1969: Bane, 1969).

Although the initial research plan anticipated using the original form of the instrument, it was found difficult to apply to kindergarten-first grade classrooms, and a new version of the instrument was developed. The modification was developed in two stages. First, observers who had visited classrooms in the first-year data collection developed items to represent the levels of the Taxonomy from their memory of the classrooms. Then these items were tried out in tape listening, new ones developed as needed, and old ones modified or redefined. When the items stabilized, the form of the instrument was fixed and tape coding was begun (see Figure 5).

The usual recording procedure used with a sign system was modified as well. Ordinarily an item is tallied only once in an observation period, but it seemed possible that the high rate of pupil response which is emphasized in some programs might be seriously under-represented. As a consequence, the procedure of tallying every three seconds (or each interaction) was followed. Since conventional sign data typically discriminate effectively (and, in fact, were found to do so for FLAC and the TPOR in these data), the data of the Cognitive Taxonomy were also analyzed with each observation period scored zero or one (for any nonzero frequency, regardless of size). Since the latter data appeared to be at least as discriminating, only those are reported, and zero or one recording was employed with the second year's data.

A superficial consideration of the cognitive domain sometimes suggests that its higher levels are more appropriate for older pupils than younger. Yet

Figure 5 - Florida Taxonomy of Cognitive Behavior, 1969-70*

T / P	T / P	T / P	
			1. Memory
/	/	/	a. Repeats from memory
/ /	/ /	/ /	b. Repeats other
/ /	/ /	/ /	c. Repeats in sequence
/ /	/ /	/ /	d. Choral response
/	/	/	e. Spells
/ /	/ /	/ /	f. Gives, receives information
/ /	/ /	/ /	g. Seeks information
			2. Translation
/	/	/	a. Sounds letters
/ /	/ /	/ /	b. Names pictures, objects, color, letter
/ /	/ /	/ /	c. Copies letter, number, word (learned)
/ /	/ /	/ /	d. Gives, follows directions
/ /	/ /	/ /	e. Describes activity, picture, etc.
/	/	/	f. Reports experience (2+ thougths)
/ /	/ /	/ /	g. Describes situation, event
/	/	/	h. Recognizes word (sight reads)
/	/	/	i. Translates one language to another
/	/	/	j. Asks, gives permission
			3. Interpretation
/	/	/	a. Sounds out word
/	/	/	b. Classifies (1 attribute)
/	/	/	c. Counts
/	/	/	d. Adds, subtracts
/	/	/	e. Uses units, tens
/	/	/	f. Compares letters, numbers
/ /	/ /	/ /	g. Copies letter(s), number(s), learning
/	/	/	h. Gives class name (vehicle, etc.)
/	/	/	i. Identifies similarities, differences
/	/	/	j. Asks, gives reason
/	/	/	k. Names sensation
/	/	/	l. Performs learned task or process
/	/	/	m. Relates terms (of one-first)
/	/	/	n. Makes comparisons

Figure 5 - Continued

Activity _____ Teacher _____ Program _____

T / P	T / P	T / P	
			4. Application
/	/	/	a. Classification (2+ attributes)
/	/	/	b. Directs learning game
/	/	/	c. Creates arithmetic problem
/	/	/	d. Writes, types sentence
/	/	/	e. Asks, tells who, what, where, etc.
/	/	/	f. Seriates (alphabetizes)
/	/	/	g. Applies previous learning to new situations
/	/	/	h. Reads
			5. Analysis
/	/	/	a. Verifies equation balance
/	/	/	b. Infers feeling or motive
/	/	/	c. Infers causality (tells why)
/	/	/	d. Cites evidence for conclusion
			6. Synthesis
/	/	/	a. Elaborates on picture, story, etc.
/	/	/	b. Proposes plan or rule
/	/	/	c. Play acts
/	/	/	d. Makes up story
/	/	/	e. Makes fantasied object
/	/	/	f. Makes common object
/	/	/	g. Draws, colors common object
/	/	/	h. Draws, colors fantasied object
			7. Evaluation
/	/	/	a. Compares with criteria, rule or plan

*This is an experimental form which should not be cited or used without permission of the developers.

attention to the cognitive activities of classrooms showed that activities, at least through the middle levels of the instrument, occurred fairly frequently. The difference, of course, is that simpler materials and concepts are involved. The development of a Piagetian concept such as conservation falls at the level of synthesis, and the discussion that accompanies a story or a reading lesson may deal with questions such as, "What else might Jimmy have done?" (synthesis), or "Would it have been better if Jimmy had done something different? Why?" (evaluation).

The complexity of the concepts and the nature of the subject matter will differ from age to age, of course, but higher level thought processes seem clearly to be an important part of the development of the young child.

In fact, an idea that became more compelling as the instrument was developed was that much of the learning done by pupils in the lower grades is learning how to do processes that occur with little thought for older pupils. For example, the item "Reads" is at the lowest cognitive level in the general purpose instrument, but is a high level item for pupils at the kindergarten, first grade level. Deriving the multiplication table is a demanding operation, but as a tool in use it is low level, and becomes most useful when it reaches the level of memory. Indeed, a realization that emerged which seems paradoxical in some ways, is that a part of the process of education consists of making higher level behaviors lower level. That is, an activity which is initially complex, such as reading, becomes a lower level one as it becomes automatic and routine. Thus, a goal of the educational process is to make complex operations so well learned that they become low level operations, and tools in turn for other higher level operations.

Reciprocal Category System - The work with the original system (Flanders Interaction Analysis) has been summarized by Flanders (1965, 1970), and Amidon and Hough (1967). There are a number of modifications of the system, but only the one used in this research will be discussed here.

The modification by Ober, Wood, and Roberts (1968) offers a number of advantages over the original. The seven teacher categories of the Flanders System have been expanded to nine (see Figure 6): teacher lecture is divided into that which is responsive to pupils, and that which is teacher initiated; and the category of teacher criticism has been divided into a category for correction without criticism, and one for criticism. Category 10 remains silence and confusion as before. The major advance, however, is reformulating each of the categories so that they can be used for pupil talk as well as for teacher talk. That is, teacher amplification of a pupil's idea is categorized as a 3; a pupil amplification is a 13. Each category is changed from a teacher category to a pupil category by adding a "1" as the first digit. The observer, then, learns nine categories as he did with the Flanders System but has 18 to work with and, as a consequence, the same variety of pupil talk is recorded as teacher talk. This permits identifying the extent to which pupils do such things as maintain order in the classroom, correct subject matter misunderstandings of other pupils, build on each other's ideas, contribute information, or express and accept feeling in the classroom. Practically speaking, this modification offers more than twice the richness of the data provided by the original Flanders System at little increase in the complexity of the observer's task. In the second year's data, Silence and Confusion were broken into two categories -- Silence (10) and Confusion (20).

Figure 6 - Summary of Categories for the Reciprocal Category System

Category Number Assigned to Party 1[1]	Description of Verbal Behavior	Category Number Assigned to Party 2[2]
1	"WARMS" (INFORMALIZES) THE CLIMATE: Tends to open up and/or eliminate the tension of the situation; praises or encourages the action, behavior, comments, ideas and/or contributions of another; jokes that release tension not at the expense of others; accepts and clarifies the feeling tone of another in a friendly manner (feelings may be positive or negative; predicting or recalling the feelings of another are included).	11
2	ACCEPTS: Accepts the action, behavior, comments, ideas and/or contributions of another; positive reinforcement of these.	12
3	AMPLIFIES THE CONTRIBUTIONS OF ANOTHER: Asks for clarification of, builds on, and/or develops the action, behavior, comments, ideas and/or contributions of another.	13
4	ELICITS: Asks a question or requests information about the content subject, or procedure being considered with the intent that another should answer (respond).	14
5	RESPONDS: Gives direct answer or response to questions or requests for information that are initiated by another; includes answers to one's own questions.	15
6	INITIATES: Presents facts, information and/or opinion concerning the content, subject, or procedures being considered that are self-initiated; expresses one's own ideas; lectures (includes rhetorical questions -- not intended to be answered).	16
7	DIRECTS: Gives directions, instructions, orders and/or assignments to which another is expecred to comply.	17
8	CORRECTS: Tells another that his answer or behavior is inappropriate or incorrect.	18
9	"COOLS" (FORMALIZES) THE CLIMATE: Makes statements intended to modify the behavior of another from an inappropriate to an appropriate pattern; may tend to create a certain amount of tension (i.e., bawling out someone, exercising authority in order to gain or maintain control of the situation, rejecting or criticizing the opinion or judgment of another).	19
10	SILENCE: Pauses, short periods of silence.	
	CONFUSION: Periods of confusion in which communication cannot be understood.	20

[1]Category numbers assigned to Teacher Talk when used in classroom situation.
[2]Category numbers assigned to Student Talk when used in classroom situation.

In using the Reciprocal Category System, an observer enters the classroom (or begins a tape), spends a few minutes getting the feel of what is going on, and then begins to write, at least every three seconds, the category number which best describes what is going in at that moment. If the activity changes within three seconds a new category is recorded. As a consequence the observer can sometimes record four or five categories in as many seconds. While this seems a very difficult job, eight to twelve hours of training make it relatively straightforward.

A strength of this procedure (initiated in Flanders' work) is the capturing, one step at a time, of the sequence of occurrences in the classroom, by the way the categories are tabulated into a matrix. It then becomes possible to answer such questions as, "What does the teacher typically do when a pupil stops talking?" "What kinds of teacher behavior are followed by pupil responses?" "Does a teacher respond differently to a pupil initiation than she does to a pupil response?" "What proportion of the teacher talk is made up of criticism of pupils, followed by directions?"

One of the interesting aspects of the matrix the RCS system produces is that it breaks down into four submatrices: teacher-teacher talk, teacher-pupil talk, pupil-teacher talk, and pupil-pupil talk. Along with this increased richness of the data, the possibility is retained of returning the data to that of the Flanders System by pooling categories. As a consequence, relationships of these data to the store of information accumulated under the Flanders System can be studied easily.

The original instrument is probably the best validated of any, if validity is defined in terms of the prediction of change in pupils. The relevance of teacher behavior as measured by this instrument to pupil achievement growth has

been widely studied, and relationships with pupil attitudes have also been found. A smaller number of researches show the validity of the instrument for predicting such things as pupil change in personality, growth in creativity, and perceptions of the nature of the classroom (Soar, 1966).

Observers and Training

Three teams of two observers each were used, consisting of graduate students and research assistants. The first week of the quarter was spent in training on the Teacher Practices Observation Record (TPOR), beginning initially with a presentation of specific categories by way of film clips, followed by observation in classrooms, with discussion of differences in the categories recorded. The second week training was carried out on the Florida Affective Categories (FLAC) (Florida Climate and Control System the second year), using classroom observation and discussion of differences from the beginning. The last day of the second week all teams observed in Follow Through classrooms in Jacksonville, to complete standardization in the use of the observation systems. The third week all teams observed in Philadelphia, since the number of classrooms there was large enough that all three teams could work simultaneously and could meet after each day's observation to discuss questions raised and agree on common procedures. This week represented the transition from training to full-scale work in the field. In addition, some teachers seemed unusually uncomfortable about wearing a wireless microphone. Finally, even with experience, the attention required by the equipment continued to be a distraction of some consequence to the observers. For these reasons, in numbers of classrooms the wireless microphones were not used.

For the second year, all of the recordings were obtained by observers moving about as inconspicuously as possible, carrying the tape recorder. Since the recorders were small battery-powered units, this was easily done. Although the

distraction to the pupils was somewhat increased initially, it soon declined and seemed generally not to be a source of difficulty. The final procedure depended on choice of equipment to a large degree, and these details are presented in Appendix A.

In a free-play setting in a classroom with hard walls, floor and ceiling, it was difficult to obtain an intelligible recording. However, an observer actually present in the classroom will not be able to understand much of the interaction in such a setting. In general, the refined recording procedures seemed to produce tape which was as understandable to a coder as the live situation was to the observer.

Apart from the technical difficulties of making recordings in classrooms, there were other difficulties. The typical Follow Through classroom is an unusually diverse one in terms of the variety of activities going on simultaneously. This, in turn, means that the complexity of the observer's task is increased several fold over what it would be in the typical classroom a grade level or two higher. It seems likely that the higher the grade level, in general, the simpler the observer's task. Even with two observers watching for different classes of behaviors, it is inevitable that some portion of what occurred in the classrooms went unobserved. On the other hand, with the number of periods observed, the hope that the classroom would be fairly accurately represented seemed reasonable.

Another frequently occurring pattern of behavior made the observer's task difficult. In many classrooms, half a dozen or more small groups of pupils would be at work on different tasks, with adults with a number of the small groups. The typical behavior of the adult was to speak softly so as not to disturb other groups nearby. Pupils, to a greater or lesser degree, tended to follow this

same pattern. As a consequence, it was frequently difficult to hear interaction between teacher and pupils in a subgroup or to tape record it. The effect was a quiet group in a noisy room, or perhaps one not so much noisy as busy. At the extreme, but not uncommonly, it was possible to sit directly at the elbow of a teacher working with individual pupils and be unable to hear a word that was said between the teacher and the pupil.

The activities coded from tape suffer a further disadvantage in that they represent only the verbal activities in the classroom. This is not a particular problem with the Reciprocal Category System (RCS), since it is intended to record only verbal activities anyway. But for the Cognitive Taxonomy this is a somewhat greater disadvantage. A child may be working with cuisinaire rods, building a stack of blocks with a repeating sequence of colors, or carrying out a classification task by himself, and there would be no record of the cognitive complexity of this behavior recorded on the tape. To the extent that programs differ in the proportion of the learning activities that take place in verbal interaction, their representation on the Cognitive Taxonomy will differ.

On the other hand, the data collected from tape is relatively inexpensive in comparison to the cost of live data, so that it need add relatively little information to be justified.

On the whole, the data recorded live are probably reasonably representative of the classrooms observed, although certainly less than complete. The data taken from tape are probably less representative, and this will need to be recognized in the interpretation of the results.

As another aspect of the overall procedure, data were collected on a number of occasions from the Follow Through teachers in Jacksonville, toward an

analysis of the effect of the presence of an observer team over a period of time. Before these data were analyzed, however, two studies were published that explored the question more extensively than would have been possible here, so the local analysis was dropped.

Observer Effects

The "conventional wisdom" of workers in this area seems to be that the observer soon becomes part of the woodwork for the pupils, if he never interacts with them and never takes part in any of the activities of the classroom (Medley and Mitzel, 1963). He probably ceases to be a matter of concern for the teacher much more slowly for most teachers; is never a concern for some teachers, and probably never ceases being a concern for others.

Only recently have empirical data appeared on the question. Masling and Stern (1969) observed two full days in each of 23 fourth and fifth grade classrooms, and correlated observational measures at differing separations in time from each other. They hypothesized that the effect of the observer should diminish in time, so that later observations should correlate more highly with each other than early ones would with late ones. They comment, "These correlations show no discernible pattern over time," and conclude that two interpretations of the data are possible: ". . . (a) observer influence is negligible. . . (b) the effects of the observer are more complex than had been foreseen and affect various aspects of teacher and pupil behavior differntially. It is difficult to tell from the present data which conclusion is more appropriate or even if both cannot legitimately be made" (p. 353).

Samph (1968) made tape recordings without the teacher's knowledge, and compared these to behavior recorded live by an observer. Teachers' agreement to participate in a study of pupil behavior was obtained, four microphones were

installed in each classroom, and teachers were told that recording would not be begun until after pupils had had time to get used to the presence of the microphones. A month later teachers were told that recording would soon begin, but it had actually begun ten days after the microphones were installed. During this early period, control or baseline data were collected, using Flanders Interaction Analysis. Following this, observers collected live data. After the completion of data collection, teachers were informed of the deception and their permission to use the data was solicited. Teachers were also asked to indicate the style of teaching they thought ideal on the same dimensions studied in the research.

The finding of primary relevance to this study is the comparison of the baseline data to data collected when a previously scheduled observer was present in the classroom. Five variables from Flanders Interaction Analysis were tested for significance of change (all comparisons were in terms of deviations of each teacher from her own ideal). Significant change was found for two of the five variables: the amount of praise produced by the teacher increased when an observer was present, and the amount of criticism decreased. In each case the difference between means for the control and experimental conditions was about three quarters of a standard deviation. Again, this is the variability of differences between observed and ideal behavior for individual teachers, and probably is much smaller than the variability of behavior across teachers.

None of the other three variables showed significant change. They were the total of teacher acceptance of pupil's ideas, the I/D ratio (the ratio of the teacher's acceptance of feeling, praise, acceptance of ideas and questioning to her lecturing, giving directions, and criticizing), and the i/d ratio (similar to I/D, but omitting questions and lecture, the primarily substantive categories).

The changes were roughly a third of a standard deviation or less for these latter differences.

It seems reasonable to assume that teaching is a difficult and complex task, and that altering one's style is easiest for the more obvious aspects, such as praising pupils more and criticizing them less. By this interpretation the more complex measures of teacher behavior may have changed little, either because most teachers do not teach by a conceptual scheme that includes them, or because they are more difficult to monitor.

Overall, even the statistically significant changes do not appear great in terms of the variability of behavior from teacher to teacher, so that it seems reasonable to assume that teacher behavior does not change greatly as a consequence of the presence of an observer. If the change a teacher makes is in the direction of a truer implementation of her philosophy as Samph's study suggests, and if programs in Follow Through follow different philosophies, then the effect of an observer should be to sharpen program differences. But when it is recognized that the present study is analyzing approximately 400 items of classroom behavior, it seems reasonable to hope that not many of them were affected very much.

Analysis of Observational Data

As each five-minute observation period was completed, the nature of the activity was described briefly on a record sheet. After the data collection phase of the project was over, several schemes for classifying these activities were tried out. It was immediately apparent that not all activities that occurred could be separately classified without the data being so finely broken down that analysis could not be carried out within any one of the categories. The final classification scheme that was adopted was one which represented

simultaneously the degree of cognitive focus and of teacher direction; ranging from clear "teaching" situations, in which the objectives were clear to the teacher and to the pupils; to an intermediate level, in which the objectives were clear to the teacher, but the pupils might not have been aware that the activity had an educational purpose (story time, for instance); to activities in which the nature and direction of the activity was a matter of the pupil's choice (free-play, for example).

The conclusion was reached that analyzing separately by category was not functional on the basis of an initial factor analysis of the TPOR in which each activity by each teacher entered the analysis separately. For many teachers, then, three different sets of observational data entered the analysis, one for each activity level. As a check on the usefulness of this somewhat unconventional procedure, however, the data for all activities were pooled for each teacher, and the analysis repeated. An apparently clearer set of factors emerged, so that for all subsequent analyses all observation data for each classroom were pooled.

The next step in the analysis of each set of observational data was to calculate means and standard deviations for each of the items. Items with very small means and/or variances were then either eliminated or pooled with related items. Following this procedure, an area transformation was carried out item by item to make the data as nearly normally distributed as possible, and with approximately equal variabilities. The first of these considerations seemed important since many items showed essentially "J-curve" distributions; and equality of variances was important because incomplete factor scores were to be calculated later which would involve simply summing and averaging a series of items of behavior without further weighting.

The data for each observation system were next factor analyzed separately using principle components factor extraction with multiple R squared in the diagonal, followed by varimax rotation of a series of numbers of factors. Rather than relying on one or more of the various rule-of-thumb criteria for number of factors to rotate, a series of factors were rotated, and the output interpreted. The number of factors rotated which seemed to offer the clearest set of interpretations was retained; although on several occasions additional series of factors were rotated, seeking greater clarification. Earlier research (Soar, 1966) had suggested that the usual criteria for selecting number of factors to rotate are not functional for observational data of this sort, and the results for these analyses continue to support that conclusion. Examination of the eigenvalues, for example, shows that few factors were retained for which the eigenvalue was less than three, and even fewer for which it was less than two. When factors were rotated to eigenvalues near one, the factors seemed unreasonably fractionated, or uninterpretable.

After the decision had been reached about the number of factors to be rotated for each observation schedule, incomplete factor scores were calculated by simply pooling the T-scores for those measures which loaded $\pm$.40 or above on each of the factors. Although Glass and Maguire (1966) have criticized this procedure, Horn's comments (1965) seem more compelling. He points out that factor analysis, as any other least squares estimating procedure, will capitalize on idiosyncratic variance, and that small numbers of subjects and large numbers of measures aggravate this problem. As a consequence, validity shrinkage on cross-validation becomes extensive. The incomplete factor score procedure cited above minimizes the effects of idiosyncratic variances and validity shrinkage. It does so at the cost of permitting factors to be correlated, rather than orthogonal,

as complete factor scores would be. This is the major criticism made by Glass and Maguire, but since this assumption is typically made only for computational convenience, it seems the much less compelling issue of the two. Following the calculation of factor scores, differences between program means were tested using Duncan's new multiple range test (Dixon, 1970).

In addition to the orthogonal rotations described above, oblique rotations were also carried out with each set of data for the first year using the simple loadings procedure (Jennrich and Sampson, 1966). In no case for any set of data did two factors correlate as highly as .3, and correlations above .2 were quite rare, so that the varimax rotations were retained in all cases. (This conclusion applies to the complete rotated factors, not the incomplete factor scores).

These procedures (except for oblique rotations) were repeated for the data of the second year. Since factor structures differed to varying degrees from one year to the other, each year's structure was applied to both sets of data, and the structure retained which seemed clearest, discriminated programs best, or related most strongly to pupil growth.

In the first year's analysis of FLAC, the affect items had been summed within the eight subsections (Teacher, Nonverbal, Supportive; Pupil, Nonverbal, Supportive, etc.), and the pools had entered into analysis. Subsequent analysis of items indicated that they were not homogeneous within a subsection, so in the second year's analysis of FLACCS one factor analysis was carried out on the control items, another on the affect items, and a third on the items that had loaded most heavily on each of the factors from the first two analyses. This latter analysis is the one reported. Because of the extensive revision of the instrument, no attempt was made to report both years' data on the same set of factors.

The rating scales were also correlated with the classroom mean pupil gain

measures for each year's data. Some items are the same, but some have been revised, others eliminated, and new ones added. The data are reported separately for each year.

Analysis of Pupil Data

The first year, SRI divided several standardized and experimental tests into parallel thirds to minimize testing time, and administered this battery in the fall and spring to a sample of Follow Through classrooms. Pre- and post-scores were available to this project for some of the classrooms in our sample from these administrations. The tests used in first grade included the Metropolitan Readiness Test, one of Deutsch's Early Childhood Inventories, and the Caldwell-Soule Pre-School Inventory. In kindergarten, in addition to these, the Lee-Clark Reading Readiness Test and the other Early Childhood Inventory were given. Data were available for at least half of the pupils in 20 first grade classrooms, and from 23 to 35 kindergarten classrooms, depending on the test. Additional measures were administered, but not analyzed because of missing data.

These data were reduced to regressed gain scores and factor analyzed separately by kindergarten and first grade. Factor scores were calculated from these analyses, reduced to means by classroom, and these means were then correlated with factor scores from the observational data. In addition, selected sets of data were studied by fitting curves to the relations between observational data and pupil growth data. The usefulness of this approach was suggested by earlier work (Soar, 1968).

The second year, SRI changed both the test battery and the grouping of pupils for testing, but abbreviated versions were used again. Kindergarten classes were given the Lee-Clark Reading Readiness Test, two of the subtests from the Deutsch Early Childhood Inventory, the Caldwell-Soule Pre-School

Inventory, the Wide Range Achievement Test, and a self-concept measure assembled from two existing measures. Entering first grade classes (those without kindergarten experience in Follow Through) were given the same battery. Nonentering first grade pupils (those with experience in Follow Through kindergartens) were given the Metropolitan Readiness Test, two tests made of items supplied by sponsors, the Wide Range Achievement Test, and the same self-concept measure. The achievement tests were combined into measures called "quantitative-computational," "verbal-linguistic," and "perceptual-motor."

In our analysis of the first year's data, factor analysis of the gain scores from each grade level had produced two factors, one identified as Simple-Concrete, the other as Abstract-Complex, which correlated differently with the classroom observational measures. So it seemed desirable to attempt to create new groupings of items and subtests paralleling the factors identified in the analyses of the first year's data.

Procedures paralleling those of the first year were followed in a general way, except that the need to work with regressed gain for items as well as subtests created problems in the analysis (the Sponsor Books, and the WRAT to some extent, included heterogeneous items not grouped into conventional subtest form, with possible scores ranging from one to twenty). As a consequence, some of the subscores in the second year's data come from factor analysis, and others come from item analysis using a priori clusters of items or results from factor analysis as a starting point. As before, factor scores were reduced to classroom means, and correlated with the classroom observation data. The details of the problems, the rationale, and the procedures which were evolved, are presented in Appendix B.

In the first year's data, 55 of the 70 classrooms observed are represented in at least some of the pupil data analyses. Some classrooms were

observed for the sake of program description which were known not to be in SRI's sample. In the second year's data, only 40 classrooms are represented in the analysis of pupil data. Again, some classrooms not in SRI's sample were followed; other reasons for loss of classrooms are detailed in Appendix C.

Results

Pupil Regressed Gain Measures

As described in the procedure section, measures of Pupil growth differing in complexity or abstractness were sought from the measures administered by SRI, using factor analysis and item analysis.

Achievement Data, 1969 - A two factor rotation for first grade and a three factor rotation for kindergarten are shown in Table 3. It can be seen that there is considerable similarity across the two analyses, despite the larger number of tests for kindergarten. In general, the Simple-Concrete measures require performance such as naming letters or numbers, performance which seems not to require processing of information but only retrieval. The Complex-Abstract factor score, on the other hand, requires pupils to compare complex figures, to copy figures or shapes, or to possess broad information which is not particularly school oriented.

Achievement Data, 1970 - In preparation for calculating regressed gain scores for the four subgroups of pupils defined by black, white, high social status and low social status, fall and spring means were calculated on each measure. Table 4 reports results for the a priori composites of Simple-Concrete and Complex-Abstract pupil growth for the four subgroups. There does not appear to be a consistent tendency for more growth in blacks or whites, or for high or low social status to grow more during the year. The small differences that appear

Table 3

Factor Analyses of Kindergarten and First Grade
Regressed Gain Scores - 1969

Subtest Description	Kindergarten Factors[1] 1	2	3	h^2	First Grade Factors[2] 1	2	h^2
Lee-Clark Reading Readiness							
1. Letter Matching	.05	.62*	.28	.46	Test		
2. Letter Cross-out	.11	.48*	.28	.32	not		
3. Vocab. & Instructions	.03	.54*	-.04	.30	given		
4. Ident. Letters & Words	.24	.57*	.16	.41			
Metropolitan Readiness							
1. Word Meaning	.46*	.15	.03	.24	.49*	.03	.24
2. Listening	.38	.12	-.08	.17	.36	-.07	.14
3. Matching	.46*	.32	.09	.32	.39	.20	.19
4. Alphabet	.33	.22	.46*	.37	.24	.58*	.40
5. Numbers	.28	.31	.24	.24	.33	.29	.19
6. Copying	.33	.20	.16	.18	.44*	.14	.21
Deutsch Early Childhood Inventory							
1. Pre-Math	.39	.21	-.03	.20	Test		
2. Pre-Science	.42*	.01	.09	.18	not		
3. Pre-Positions	.43*	.00	.26	.25	given		
Deutsch Early Childhood Inventory							
1. Alphabet	.00	.08	.73*	.54	-.09	.71*	.51
2. Numerals	.10	.20	.57*	.38	.20	.62*	.42
3. Shape Names	.31	.11	.25	.17	.46*	.18	.25
Pre-School Inventory (Caldwell-Soule)							
1. Social Responsiveness	.48*	.06	.19	.28	.39	.38	.30
2. Associate Vocabulary	.54*	-.09	.25	.37	.54*	.35	.41
3. Concept Activation Numerical	.51*	.11	.34	.38	.33	.22	.16
4. Concept Activation Sensory	.27	.13	.32	.19	.42*	.13	.19
Factor Title	Complex-Abstract	Un-named	Simple-Concrete		Complex-Abstract	Simple-Concrete	

[1] N = 731

[2] N = 476

*Measures loading .40 or over were carried into factor scores.

Table 4

Fall and Spring Standings for Four Kindergarten Subgroups
on A Priori Composite Scores
1970

Subtest Description	N	Means		Raw Gain	Standard Deviations	
		Fall	Spring		Fall	Spring
Complex-Abstract Composite[1]						
Black, High SES	73	9.26	12.15	2.89	2.67	2.61
Low SES	105	9.45	11.60	2.15	3.26	3.49
White, High SES	36	12.44	14.64	2.20	3.30	2.90
Low SES	35	11.09	13.71	2.62	2.99	2.89
Simple-Concrete Composite[2]						
Black, High SES	73	12.16	17.89	5.73	4.28	4.55
Low SES	105	9.62	15.91	6.29	4.73	5.44
White, High SES	36	14.72	20.61	5.89	5.90	2.33
Low SES	35	10.71	16.94	6.23	5.68	5.32

[1]Preschool Inventory: Social Responsiveness, Associate Vocabulary, Concept Activation, Numeric

[2]Early Childhood Inventory: Alphabet, Numerals

show no consistent pattern to be associated with the particular subgroup. This conclusion was supported by tests of differences in regression coefficients for blacks and whites for a subgroup of the first year data (Honeycutt, 1971), which showed one significant difference for 13 comparisons. The t's were more often less than 1 (Table 5).

This was a convenience for the statistical analysis, but more important, the implications that it has for education seem considerable. In the current climate of controversy, one issue of which revolves around the question of whether black pupils are capable of learning abstract concepts (or whether lower class pupils are capable of such learning), the finding of such similar patterns of growth during school year is very reassuring. The black subgroups do start at a lower position and finish at a lower position than white subgroups do; and lower social status groups start and finish in lower positions than high socio-economic groups do, but growth during the year appears to be similar. These results appear to agree with those of Hayes and Grether (1969) who found that the major differences between social status groups in the amount of academic growth that took place during elementary school occurred during the summers, rather than during the school year. In their data, slopes representing growth during the school year were essentially parallel across socio-economic status groups, but they diverged during the intervals representing the summers. These data agree in general with that conclusion.

The results of the factor analyses of the kindergarten and entering first grade data are shown in Table 6. It can be seen that there is considerable similarity across the two factor analyses -- perhaps a surprising degree of similarity when it is recognized that the kindergartens were largely urban and northern, and covered a range of programs from contingency management to "open" classrooms,

Table 5

t-tests for the Regression Coefficients of Pretest on Raw Gain Scores

Test or Subtest	First Grade Black	First Grade White	t
N	190	176	
Metropolitan Readiness Test			
1. Word Meaning	-.54	-.45	.94
2. Listening	-.69	-.74	.43
3. Matching	-.63	-.63	.12
4. Alphabet	-.73	-.83	3.07*
5. Numbers	-.45	-.53	1.06
6. Copying	-.44	-.47	.33
Early Childhood Inventory (Deutsch)			
1. Alphabet	-.81	-.84	.74
2. Numerals	-.73	-.73	.07
3. Shape Names	-.49	-.54	.66
Pre-School Inventory (Caldwell-Soule)			
1. Social Responsiveness	-.70	-.76	.67
2. Associate Vocabulary	-.53	-.68	1.49
3. Concept Activation, Numerical	-.53	-.54	.06
4. Concept Activation, Sensory	-.77	-.68	1.07

*$p < .01$

Table 6

Factor Analyses of Kindergarten and Entering First Grade Regressed Gain Scores - 1970

	Kindergarten Factors[1]				Entering First Factors[2]			
	1	2	3	h^2	1	2	3	h^2
Lee-Clark Reading Readiness								
1. Letter Cross-out	-.02	.04	.67*	.45	.21	.20	.49*	.32
2. Ident. of Letters & Words	.08	.21	.43*	.24	-.10	.08	.53*	.30
Deutsch Early Childhood Inventory								
1. Alphabet	.72*	.05	.14	.54	.67*	.04	.06	.45
2. Numerals	.52*	.04	.53*	.55	.54*	.09	.45*	.50
Pre-School Inventory (Caldwell-Soule)								
1. Social Responsiveness	.21	.18	.36	.21	.32	.30	.35	.32
2. Associate Vocabulary	.09	.15	.35	.16	.19	.33	.40*	.30
3. Concept Activation, Sensory	.23	.21	.53*	.37	.23	.25	.41*	.29
4. Concept Activation, Numerical	.17	.19	.44*	.26	.10	.32	.34	.23
Wide-Range Achievement Test								
1. Name Spelling	.36	.29	.35	.34	.05	.07	.55*	.31
2. Copying Marks	.25	.07	.26	.13	-.02	.28	.32	.19
3. Spelling Words from Dictation	.00	.71*	.14	.53	.19	.64*	.11	.45
4. Counting Dots	.24	.22	.14	.12	.03	.02	.32	.11
5. Oral Numbers	.50*	.02	.50*	.49	.08	.60*	.36*	.49
6. Showing Fingers	.26	.37	.41*	.38	.15	.33	.71*	.63
7. Which Is More?	.23	.43*	.13	.25	.22	.42*	.33	.34
8. Solving Oral Problems	.24	.56*	.17	.39	.12	.60*	.28	.45
9. Written Computation	.13	.70*	.18	.55	-.10	.67*	.35	.58
10. Recog. Two Letters in Name	.53*	.21	.14	.35	.47*	-.06	.24	.28
11. Naming 13 Letters	.74*	.07	.06	.55	.46*	.40	-.17	.39
12. Recognizing 10 Letters	.33	.11	.26	.19	.26	.11	-.03	.08
13. Word Reading Aloud	-.05	.78*	.16	.63	.08	.67*	-.01	.46
Factor Title	Simple-Concrete	Skill	Complex-Abstract		Simple-Concrete	Skill	Complex Abstract	

[1] N = 249

[2] N = 190

*Measures loading .40 or over were carried into factor scores.

whereas the entering first grades were primarily rural and/or southern, and involved only three programs, all stressing the personal-social development of children.

Comparison of Tables 3 and 6 shows extensive change in the battery of tests administered to pupils from the first to the second year, so it is not surprising to find a different factor structure. As with the first year's analyses of the kindergarten, three factors were rotated, although one of these was a different factor. Two of the factors seemed to parallel the first year's analysis: a Simple-Concrete factor, and a Complex-Abstract one. Instead of the factor made up of the Lee-Clark in the first year's data, a new third factor emerged which appeared to represent skills-learning such as reading, arithmetic computation, spelling, and comparing quantitative concepts. This latter factor apparently emerged as a consequence of the addition of the WRAT to the battery since it represents activities of this sort to a high degree.

The Abstract-Complex factor is rather different in nature the second year. Neither the Metropolitan nor the Copying Figures subtest from the Early Childhood Inventory was administered to these pupils the second year, and these tests had been important contributors to the first year's Abstract factor. Rather, two measures from the Lee-Clark, which had made a separate factor in the first year's kindergarten data, were added to the factor, perhaps because the instructions and the method of recording are complex, although the tasks do not appear to be. Also added to the factor was Numerals from the Early Childhood Inventory (which also loaded on the Concrete factor), Name Spelling (for the entering first grade), and Showing Fingers. All in all, these items seem closer to skill than the Abstract factor from the previous year.

Data reported in Appendix D show that at least the Simple-Concrete factor

rank orders programs differently than the Skill and Complex-Abstract factors do, for kindergarten pupils. The small number of classrooms should not be taken as representing programs, but the different orders for the same pupils do suggest that the measures differ in the kinds of growth they reflect. No differences which could not be assumed to be chance were found between entering first grade program groups. But with nine classrooms, and three programs, none of which is strongly skill-oriented, this is not surprising.

For the nonentering first grade pupils, composites were created by item analysis, using criterion item groups created by both a priori and factor analytic procedures. These composites are shown in Table 7. In preliminary analyses of the data, the items tended to break up into those which had been individually administered, and those which had been group administered. As a consequence, Simple-Concrete, Skill and Complex-Abstract composites were created separately for each mode of administration.

The relationships between these composites are shown in Table 8. The Group and Individual Abstract scores are not highly related, but mode of administration (or the nature of the task), appears to make less difference for the Skill and Simple-Concrete measures. The Complex-Abstract and Simple-Concrete measures relate at a low level, but Skill relates at a somewhat higher level with both of these. Overall, the pattern of correlations supports the concept of a dimension of degree of abstractness or complexity, with the three classes of measures spaced along it.

The Simple-Concrete and Skill measures seem much like those identified in the earlier two groups. The Individual Complex-Abstract seems relatively similar to that of the kindergarten-entering first data, but the Group Abstract seems more like the first year's Abstract factor, with considerable overlap with the subtests

Table 7

Items Combined Into Subscores for Nonentering First Grade, 1970

Complex-Abstract	Skill	Simple-Concrete
	Group	
MRT[1] Word meaning	MRT[1] Numbers	MRT[1] Alphabet
Matching	SIG[2] Word recognition	SIG[2] Count and write
Copying	Make sides equal	Order alphabet
	Make # lines	
	Add-Bal. Equation	
	Individual	
SII[3] Cone, Hidden Figures	SII[3] Reading Words	SII[3] Count from
Verbal opposites	Read nonwords	WRAT[4] Reading numbers
Similarities	Number reading	Name 13 letters
Inconsistencies	How many 10's	
WRAT[4] Oral problems	Add and subtract	
	WRAT[4] Spelling	
	Which is more	
	Written computation	
	Word reading	

[1]MRT - Metropolitan Readiness Test

[2]SIG - Sponsor Items (Group)

[3]SII - Sponsor Items (Individuals)

[4]WRAT - Wide Range Achievement Test

Table 8

Correlations Between Subscores for Nonentering First Grade*

		Variable								
		Var.	1	2	3	4	5	6	7	8	9
Group	Complex-Abstract	1									
	Skill	2	.28								
	Simple-Concrete	3	.17	.40							
Individual	Complex-Abstract	4	.37	.43	.29						
	Skill	5	.26	.67	.50	.52					
	Simple-Concrete	6	.19	.42	.68	.25	.44				
Total	Complex-Abstract	7	.87	.44	.29	.83	.43	.27			
	Skill	8	.29	.76	.44	.50	.98	.42	.45		
	Simple-Concrete	9	.20	.45	.87	.29	.44	.98	.26	.44	

*N = 209

of the Metropolitan that entered that factor.

The differences in the kinds of pupil attainment indicated by these measures seem important. Data reported in Appendix D indicate that when the same group of pupils in several programs is examined across the several measures, the program with the lowest mean pupil growth on the Group Complex-Abstract measure, has the highest pupil growth on the Skill measure. That is, although all of the measures reflect intellectual growth, the nature of the growth differs enough to be capable of reflecting differences in program. The numbers of classrooms are too small to be representative, but the change from measure to measure for the same pupils seems important.

This finding points up another aspect of the test battery which seems important in relation to program evaluation. That is that when simply totaled, the WRAT has about as many possible points by itself as the rest of the tests in the battery combined. Since it appears to be predominantly skill-oriented, it has the potential of overdetermining any kind of battery total. Other tests contain some additional items reflecting skill attainment, whereas the items reflecting the broad, nonschool-oriented information in the Group Complex-Abstract measure are relatively few. The small number of these items makes separating out the differing kinds of growth important in evaluating Follow Through. In addition, the wide use and predictive power demonstrated in the past by the Metropolitan Readiness Test (where the Group Abstract measure occurs) seem important.

Self-Concept Data, 1969-1970 - For 1969, self-concept data were available for both fall and spring on so few classes in sufficient numbers to analyze that no analysis was attempted.

In the 1970 data, adequate numbers of cases were available, but examination of the items suggested that they were too diverse to simply sum, so factor

analysis of fall and spring status scores was carried out (to minimize the reliability problem). The loadings were marginal, however, suggesting that individual items were insufficiently reliable to support analysis for change. Further analysis of these data was not attempted

Observational Measures and Their Relation to Pupil Growth

The four instruments used for observation had over 400 items and measures of behavior. Medley and Mitzel (1963) point out that single items typically do not have high reliability, but reliability increases rapidly as items are pooled. Since many of the items could be assumed to overlap with each other, factor analysis was used as a way of identifying clusters of behavior that tended to occur together, and independently of other clusters. As indicated in the procedure section, items with loading of $\pm$.40 or greater were combined into incomplete factor scores by summing algebraically, with equal weighting. These factor scores were then used to test for differences between programs using the multiple range test (Dixon, 1970). The homogeneous subsets reported in tables for each instrument, and the nonsignificant ranges shown in Appendix D, represent subgroups of programs which do not differ significantly from each other. The presence of more than one subset or nonsignificant range indicates the existence of a significant difference between programs. These multiple range tests are presented in detail in Appendix D.

Teacher Practices Observation Record (TPOR) - The factor structure from the 1970 data was chosen as the one on which programs would be compared for the two year data. The factors and their characteristics are described below. A summary of the results of the multiple range tests is reported in Table 9, and correlations of each factor with classroom mean pupil growth are presented in Tables 10 and 11.

Table 9

Teacher Practices Observation Record
Multiple Range Tests of Program Discriminations[1]

Factor	1969 Homogeneous Subsets	1969 F	1970 Homogeneous Subsets	1970 F
1 - Pupil Free Choice vs Teacher Structured Activity	4	9.83**	4	8.76**
2 - Experimental Teaching	3	4.25**	3	2.46*
3 - Less vs More Differentiation	2	5.67**	3	4.21**
4 - Nonexperimental Teaching	3	9.67**	4	8.67**
5 - Intrinsic Motivation in a Task Setting	2	2.24*	2	1.54
6 - Positively Focused Teaching	5	17.69**	4	11.74**

[1] N = 70 Classrooms

* $p < .05$
** $p < .01$

Table 10

Correlations of TPOR Factors With Pupil Growth

Factor	Kindergarten					First Grade[4]		Entering First[5]		
	1969		1970			1969		1970		
	Abs.[1]	Concr.[2]	Abs.	Skill	Concr.	Abs.	Concr.	Abs.	Skill	Concr.
1 - Pupil Free Choice vs Teacher Structured Activity	.19	-.09	-.17	-.08	-.02	.22	-.07	.05	-.28	.21
2 - Experimental Teaching	.33	-.11	-.14	.04	.15	.18	-.07	.71*	.17	.21
3 - Less vs More Differentiation	-.09	-.13	-.00	-.17	-.12	-.33	-.02	-.22	-.48	.12
4 - Nonexperimental Teaching	-.35	.01	.47*	.36	-.03	-.28	-.02	.06	-.22	.25
5 - Intrinsic Motivation in a Task Setting	.35	.02	.32	.40	-.15	-.30	-.19	.76*	.45	.18
6 - Positively Focused Teaching	-.27	.13	.39	.30	-.12	-.29	.15	.27	.09	-.08

[1] N = 23 classrooms, p.05 = .41; p.01 = .53
[2] N = 33 classrooms, p.05 = .34; p.01 = .44
[3] N = 19 classrooms, p.05 = .46; p.01 = .58
[4] N = 20 classrooms, p.05 = .44; p.01 = .56
[5] N = 9 classrooms, p.05 = .66; p.01 = .80
* $p < .05$

Table 11

Correlations of Teacher Practices Observation Record Factors With Nonentering First Grade Pupil Growth (1970)[1]

Factor	Group			Individual			Total		
	Abs.	Skill	Concr.	Abs.	Skill	Concr.	Abs.	Skill	Concr.
1 - Pupil Free Choice vs Teacher Structured Activity	.14	-.11	.07	-.01	-.14	-.05	.05	-.13	-.01
2 - Experimental Teaching	.41	.25	.30	.57	.24	.07	.56	.25	.15
3 - Less vs More Differentiation	-.08	-.47	-.14	-.35	-.32	-.22	-.27	-.35	-.19
4 - Nonexperimental Teaching	-.57	-.04	-.33	-.26	.02	-.25	-.41	.01	-.28
5 - Intrinsic Motivation in a Tast Setting	-.05	.63*	.43	.45	.66*	.43	.29	.66*	.44
6 - Positively Focused Teaching	-.38	.46	.24	.16	.57	.32	-.03	.55	.30

[1] N = 12 classrooms, p.05 = .58, p.01 = .71

*p < .05

(1) Pupil Free Choice vs Teacher Structured Activity - This factor (Table 12) appears to contrast experimental teaching in the Deweyan sense (the even-numbered items), with nonexperimental teaching (the odd-numbered items). The positive pole (the loadings with no sign) appears to reflect a great deal of pupil freedom of choice, a rich variety of materials, and much activity and informality. All of the items appear to be ones which might be checked in a free-play setting. Noticeably absent is much emphasis on the Nature of the Problem and Development of Ideas.

The negative pole, in contrast, appears to represent a situation structured by the teacher, with restricted materials and little pupil activity. Again, there is little representation of the Nature of the Problem or the Development of Ideas. In a sense this factor seems like a free-play vs "teaching" situation, but the teaching situation seems more like stage setting or classroom routine than teaching.

The factor differentiates programs with an F of 9.83 for the first year's data, and 8.76 for the second, both statistically significant. It does not relate significantly to pupil subject matter growth for either year, however.

(2) Experimental Teaching - The essence of this factor appears to be the involvement of the pupil with a problem which is uncertain or incomplete. He is encouraged to explore, to sit and think, to suggest alternatives, but is required to test his hypotheses and to be realistic (Table 13).

The factor differentiates programs significantly both years, with F's of 4.25 and 2.46, but does not correlate with growth for kindergarten pupils or first grade pupils the first year. For entering first pupils the second year it correlated above .70 with Abstract (significant). Although not significant for the nonentering first grades, it relates in the .40's with Group

Table 12

Teacher Practices Observation Record

Factor 1 - Pupil Free Choice vs Teacher Structured Activity

Item	Loading	Description
2	.71	T makes p center of attention
4	.71	T makes doing something center of p's attention
6	.70	T has p participate actively
8	.60	T joins or participates in p's activities
12	.82	T organizes learning around p's own problem or Q
32	.74	T has p make his own collection and analysis of subject matter
36	.72	T makes a wide range of information material available
46	.42	T has p decide when Q has been answered satisfactorily
54	.82	T has p work independently on what concerns p
60	.68	T approaches subject matter in indirect, informal way
1	-.53	T occupies center of attention
3	-.69	T makes some thing as a thing center of p's attention
5	-.68	T has p spend time waiting, watching, listening
11	-.74	T organizes learning around Q posed by T
31	-.40	T collects and analyzes subject matter for p
35	-.64	T relies heavily on textbook as source of information
53	-.46	T holds all p responsible for certain material to be learned
59	-.62	T approaches subject matter in direct, business-like way

Eigenvalue = 9.95

Table 13

Teacher Practices Observation Record

Factor 2 - Experimental Teaching

Item	Loading	Description
10	.57	T encourages p to express self freely
14	.76	T involves p in uncertain or incomplete situation
16	.71	T leads p to Q or problem which "stumps" him
18	.42	T emphasizes realistic, disconcerting, or "ugly" aspects of topic
20	.61	T asks Q that is not readily answerable by study of lesson
22	.74	T permits p to suggest additional or alternative answers
24	.62	T asks p to judge comparative value of answers or suggestions
26	.70	T encourages p to guess or hypothesize about the unknown or untested
34	.45	T has p find detailed facts and information on his own
42	.42	T withholds judgment on p's behavior or work
44	.47	T encourages p to put his ideas to a test
46	.54	T has p decide when Q has been answered satisfactorily
48	.65	T asks p to evaluate his own work
50	.49	T gives p time to sit and think, mull things over
60	.45	T approaches subject matter in indirect, informal way

Eigenvalue = 6.77

Abstract, and in the .50's with Individual and Total Abstract. It seems reasonable that a factor of this nature should relate to Abstract Growth, rather than to Skill or Concrete.

(3) Less vs More Differentiation - The factor title appears to be an adequate description for this factor, but with external disciplinary control supporting the undifferentiated activity (Table 14). It discriminated significantly between programs both years. Although the correlations with growth were not significant, they were consistently negative. For nonentering first grade pupils, the relation exceeded -.40 for the Group Skill measure, and for entering first for Skill. A number of other correlations exceeded -.30. The direction of the relation associates less differentiation with less pupil growth.

(4) Nonexperimental Teaching - Although the items make clear that teaching is under the close control of the teacher, the control appears to be primarily one of keeping all the pupils together in what they are doing, and preventing pupils from straying in directions of their own (Table 15). Pupil plans which the teacher views as unlikely to be successful cannot be implemented, doubt and perplexity are prevented, hard questions or problems are avoided, and pupils are not permitted free expression. To a considerable degree, the factor seems to reflect a difference in orientation between programmed learning and an inquiry-orientation. In the first, learning is broken into small steps, and questions which cannot be answered correctly at the time are avoided. In the second, hard questions, exploration, and free expression are encouraged. This factor seems to be the obverse of Factor 2, Experimental Teaching, in many ways. Its flavor of closing off alternatives emphasizes the activity and involvement represented in Factor 2. Although experimental teaching is sometimes thought of as undirected, the "urging on" which characterized Factor 2 stands out sharply

Table 14

Teacher Practices Observation Record

Factor 3 - Less vs More Differentiation

Item	Loading	Description
17	.45	T emphasizes idealized, reassuring, or "pretty" aspects of topic
51	.76	T has all p working at same task at same time
55	.56	T evaluates work of all p by a set standard
61	.62	T imposes external disciplinary control on p
52	-.75	T has different p working at different tasks

Eigenvalue = 3.63

Table 15

Teacher Practices Observation Record

Factor 4 - Nonexperimental Teaching

Item	Loading	Description
9	.58	T discourages or prevents p from expressing self freely
13	.71	T prevents situation which causes p doubt or perplexity
15	.63	T steers p away from "hard" Q or problem
23	.44	T expects p to come up with answer T has in mind
25	.48	T expects p to "know" rather than to guess answer to Q
33	.41	T provides p with detailed facts and information
43	.81	T stops p from going ahead with plan which T knows will fail
57	.59	T motivates p with privileges, prizes, grades

Eigenvalue = 4.52

if one reads the first two words of each item. It discriminated significantly between programs in both years' data. The factor correlations are not all in the same direction. It correlates significantly positively with kindergarten Abstract for 1970, but generally negatively with other Abstract measures. This is difficult to resolve -- perhaps simply the variability associated with small samples.

(5) Intrinsic Motivation in a Task Setting - Although the factor is a diverse one, the central thread seems to be intrinsic motivation and the pupil activity that goes with it (Table 16). Although the activity is convergent in nature, the teacher sometimes withholds judgment and evaluates by different standards.

The factor differentiates programs significantly in the first year's data, but although two subgroups are created by the multiple range test in both cases, the differentiation does not create a significant F in the second year's data.

The factor correlates above .40 with Skill growth in kindergarten, above .40 with Skill for entering first grade pupils, and above .70 for Abstract growth. For nonentering first grade pupils, all six correlations for Concrete and Skill growth are above .40. The pattern of correlations suggests that the active involvement and excitement of pupils in learning activities facilitates growth.

(6) Positively Focused Teaching - The flavor of the factor is that of the teacher who is central asking questions which build on previous work, accepting only answers which agree with her expectations, evaluating the pupil's answer immediately as right or wrong, and expecting the child to give evidence for his answer or helping him to find and correct his errors (Table 17).

Table 16

Teacher Practices Observation Record

Factor 5 - Intrinsic Motivation in a Task Setting

Item	Loading	Description
6	.41	T has p participate actively
23	.42	T expects p to come up with answer T has in mind
42	.48	T withholds judgment on p's behavior or work
56	.64	T evaluates work of different p by different standards
58	.70	T motivates p with intrinsic value of ideas or activity

Eigenvalue = 3.60

Table 17

Teacher Practices Observation Record

Factor 6 - Positively Focused Teaching

Item	Loading	Description
1	.42	T occupies center of attention
19	.59	T asks Q that p can answer only if he studied the lesson
21	.64	T accepts only one answer as being correct
25	.51	T expects p to "know" rather than to guess answer to Q
30	.58	T asks p to support answer or opinion with evidence
31	.58	T collects and analyzes subject matter for p
33	.40	T provides pupil with detailed facts and information
35	.47	T relies heavily on textbook as source of information
38	.62	T helps p discover and correct factual errors and inaccuracies
41	.57	T passes judgment on p's behavior or work
45	.72	T immediately reinforces p's answer as "right" or "wrong"
49	.51	T provides answer to p who seems confused or puzzled
59	.55	T approaches subject matter in direct, business-like way

Eigenvalue = 5.92

In contrast to Factor 4, this teacher is actively moving pupils along in a direction which she has determined; whereas in Factor 4, pupils are not so much being urged on as being prevented from straying in directions which seem to the teacher to be undesirable. Another contrast exists with Factor 2, in which the teacher gives pupils greater responsibility for their learning and divergent ideas are encouraged.

This factor discriminates programs more strongly than any other in the instrument for both years' data, with F's of 17.69 and 11.74. For nonentering first grade group, it relates positively to the Group Skill measure above .40, and to the Individual and Total Skill measures above .50. Although only suggestive, the factor also correlates negatively with Abstract growth in the .30's for nonentering first grade pupils, and in the .20's for 1969 kindergarten and first grade pupils.

In summary, the TPOR discriminates programs significantly for five of the six factors both years. It suggests that experimental teaching in the Deweyan sense fosters abstract growth, and that differentiation, intrinsic motivation and positively focused teaching support skill growth.

Florida Affective Categories (FLAC) - 1969

This instrument was modified extensively on the basis of the first year's work (and renamed). Because of the changes, data are not reported together for the two years as with other instruments, but separately for each year's instrument. The extent to which each factor from the instrument discriminated between programs, and correlated with pupil growth, is indicated in Table 18. Details of program comparisons are shown in Appendix D.

Table 18

Correlation of Florida Affective Categories with Pupil Growth Scores and Multiple Range Test Program Discriminations - 1969

Factor	Multiple Range Test[1] Homogeneous Subsets	F	Kindergarten Abs.[2]	Kindergarten Concr.[3]	First Grade[4] Abs.	First Grade[4] Concr.
1 - Free Choice vs Structured Learning in Groups	3	7.60**	.10	-.08	.37	-.06
2 - Intermittent Work vs Group Singing or Games	2	1.21	-.03	.19	-.02	-.05
3 - Warm Emotional Climate	2	1.54	.14	-.12	.23	.25
4 - Teacher Negative Affect vs Pupil Work and Socialization with Adults	2	2.13	-.26	.02	.23	-.30
5 - Pupil Free to Withdraw, Seek Reassurance, Pretend, or Express Negative Affect	2	2.72*	.11	-.39*	.22	-.07
6 - Teacher Neutral Control vs Teacher Support in Task Setting	3	2.37*	-.28	-.37	-.55*	-.12

[1] N = 70

[2] N = 23

[3] N = 33

[4] N = 20

* $p < .05$

** $p < .01$

(1) Free Choice vs Structured Learning in Groups - The major pole of this factor seems to represent diverse activities in the classroom in which the pupil is free to choose what he wants to do and how he wishes to do it. (See Table 19). Movement, activity, interaction with other pupils, and expression of positive affect appear to be the central theme of the factor. While two measures seem a minimal identification of the other pole of the factor, they support each other in indicating a task group which had been specified by the teacher. This factor seems very similar to the first factor from the TPOR. The similarities of the titles reflect basic similarities in the factors, and the same programs stand at the extremes for this FLAC factor and the TPOR factor for both years' data. The finding that this factor has one of the highest F ratios for program discrimination, and separates programs into three subsets, along with a similar finding for the first factor of the TPOR, suggests that this dimension is one of the more important ones along which programs differ -- that is, that it reflects differences in program philosophies. The failure of such a powerful program discriminator to relate to growth of pupils seems an important finding.

(2) Intermittent Work vs Group Singing or Games - This appears to represent a pattern of occasional work interspersed with socialization; one of individual and small group activity in contrast to total class involvement in games and songs (Table 20). It discriminates two subgroups, but does not relate to pupil growth.

(3) Warm Emotional Climate - All of the positive affect sums appear on this factor, plus some pupil negative affect with a lower loading (Table 21). It identifies two subgroups of programs, but the F is not significant and it does not relate to pupil growth.

Table 19

Florida Affective Categories System

Factor 1 - Free Choice vs Structured Learning in Groups

Item	Loading	Description
3	.70	Teacher moves freely
14	.47	Social group without adult
18	.56	Cognitive plan, pupil problem
21	.73	Pupil's task related movement
22	.46	Pupil's aimless wandering
30	.68	Pupil's collaborative work or play
33	.41	Pupil talks to others
35	.42	Adult work, teacher initiated
37	.58	Pupil pretends adult
43	.46	Pupil uses materials
44	.78	Pupil uses play object as itself
45	.58	Pupil pretends play object is something else
53	.58	Pupil positive nonverbal
11	-.69	Task group with adult
12	-.47	Task group without adult

Eigenvalue = 6.74

Table 20

Florida Affective Categories System

Factor 2 - Intermittent Work vs Group Singing or Games

Item	Loading	Description
20	.55	Pupil intermittent work
29	.46	Pupil work with socialization
33	.52	Pupil talks to others
42	.57	Pupil "fiddles with" materials
43	.52	Pupil uses materials
1	-.56	Teacher leads singing, games
10	-.52	Teacher directs with song, music

Eigenvalue = 3.04

Table 21

Florida Affective Categories System

Factor 3 - Warm Emotional Climate

Item	Loading	Description
15	.57	Pupil seeks information
27	.54	Pupil seeks reassurance, support
36	.61	Pupil corrects others
40	.47	Pupil central - telling, showing
47	.48	Pupil negative verbal affect
48	.74	Teacher positive verbal
49	.79	Pupil positive verbal
52	.46	Teacher positive nonverbal
53	.56	Pupil positive nonverbal

Eigenvalue = 4.48

(4) Teacher Negative Affect vs Pupil Work and Socialization with Adults - The factor seems to represent teacher negative affect in contrast to work and socialization (Table 22). It creates two subgroups of programs, but the F is not quite significant and it does not relate significantly to pupil growth. It seems surprising that neither affect factor relates to the growth of pupils.

(5) Pupil Free to Withdraw, Seek Reassurance, Pretend, or Express Negative Affect - This is apparently another factor which describes pupil freedom, but a different sort of freedom than Factor 1 (Table 23). Whereas Factor 1 appeared to describe pupil freedom in choosing and carrying out a task, this factor suggests pupil freedom to do a variety of other things (withdraw, follow, seek reassurance, or even express negative affect). Another thread is that of the child fantasizing himself in an adult role and of taking responsibility for maintaining the classroom in an adult way. While the teacher is not directing or organizing, she is attending to several activities. The factor discriminates significantly between programs, making two subsets. One of the correlations with pupil growth is significant -- a negative relation with Concrete growth in kindergarten. In contrast, however, there is no suggestion that high standing on the factor inhibits Abstract growth.

(6) Teacher Neutral Control vs Teacher Support in Task Settings - In some ways this is a perplexing factor (Table 24). Two items warrant explanation. Item 5, "Teacher supervises pupil closely," represents very close supervision in which pupils carry out instructions a step at a time, under direction by the teacher. Item 6, "Teacher immobilizes pupils," represents the intent of the teacher to stop all movement or activity on the part of the pupils. The social activities can be pictured as occurring fleetingly, even under teacher control. The negative pole represents task activity and teacher positive affect.

Table 22

Florida Affective Categories System

Factor 4 - Teacher Negative Affect vs Pupil Work and Socialization with Adults

Item	Loading	Description
6	.44	Teacher immobilizes pupil
25	.55	Pupil shy, timid
46	.65	Teacher negative verbal
50	.62	Teacher negative nonverbal
13	-.44	Social grouping with adult
19	-.53	Pupil absorbed in work

Eigenvalue = 2.94

Table 23

Florida Affective Categories System

Factor 5 - Pupil Free to Withdraw, Seek Reassurance, Pretend, or Express Negative Affect

Item	Loading	Description
9	.47	Teacher attends simultaneous activities
22	.68	Pupil aimless wandering
24	.72	Pupil withdrawn
26	.40	Pupil being near, following
27	.47	Pupil seeks reassurance, support
32	.60	Pupil talks to self
34	.42	Adult work, pupil initiated
37	.56	Pupil pretends adult
47	.42	Pupil negative verbal
51	.56	Pupil negative nonverbal

Eigenvalue = 4.25

Table 24

Florida Affective Categories System

Factor 6 - Teacher Neutral Control vs Teacher Support in Task Settings

Item	Loading	Description
5	.58	Teacher supervises pupil
6	.47	Teacher immobilizes pupils
14	.52	Social group without adults
17	.61	Cognitive plan, teacher problem
28	.61	Pupil parallel play
16	-.56	Pupil gives information
20	-.47	Pupil intermittent work
52	-.44	Teacher positive nonverbal

Eigenvalue = 3.83

The factor discriminates significantly between programs. The difference in its nature from the control identified in Factor 1 is illustrated by the finding that one of the programs which stresses freedom of choice and selection of activity by pupils and which stood high on Factor 1, also stands high on this factor which reflects a kind of close control. Conversely, one of the programs whose rationale encourages teacher control of subject matter placed at the bottom of this factor. Even in those classrooms in which the items representing close control occur most frequently they occur only occasionally. The infrequent behavior occurring in classrooms in which pupil freedom is a part of program rationale suggests that teachers may occasionally feel the need to impose order on a classroom which has become more active and diverse than the teacher is comfortable with. These thoughts lead to a post hoc interpretation: although speculative, perhaps the management of a classroom by a teacher can be thought of as having two aspects -- a "structure," a set of limits or a sequence of activities within which she organizes the work of the classroom; and "control," the individual interactions between the teacher and the pupils intended to modify pupil behavior. Perhaps what this interpretation suggests is that for many teachers some minimum of structure is necessary and in its absence the teacher feels occasional need for firm control.

The range of difficulties of implementing the various programs seems relevant. It seems probable that a highly structured program which specifies a sequence of activities for teachers and pupils would be more easily implemented than programs which rely more on spontaneous behavior by the teacher. It does not seem surprising in a setting in which pupil autonomy is valued and structure minimized, that a teacher should feel the occasional need to step in and stop activity. Helping the teacher develop alternatives without structuring a sequence of

activities appears to be a more difficult teacher development problem.

The factor correlates negatively with several pupil growth measures, significantly for kindergarten Concrete and first grade Abstract growth. It seems possible that the strong control represented by the factor may inhibit growth, or perhaps the inconsistency of occasional strong teacher control in a relatively free context may be sufficiently unpredictable to the pupil as to minimize growth in a range of objectives.

FLAC appears to reflect a variety of ways in which teachers manage classrooms. A major component of the variation in this management is accounted for by Factor 1. An additional aspect of the control of the classroom is probably represented by Factor 4, one pole of which is negative affect expression by the teacher. It seems reasonable to assume that this affect expression will be directed primarily at behaviors which the teacher wishes to minimize. Factor 6 appears to represent occasional strong control in a generally free situation. What seems to be indicated is that the ways in which classrooms are structured and controlled by teachers are complex, and that the conceptual schemes we use may be too simple to represent them adequately.

Florida Climate and Control System (FLACCS) - 1970

As noted in the procedure section, the first year FLAC was revised extensively and organized around the concepts of control of the classroom and emotional climate. Since the instruments differ in major ways, the data are reported separately for each year. The results of the multiple range tests are reported in detail in Appendix D, and summarized briefly in Table 25. Correlation of the factors with pupil growth are reported in Tables 25 and 26.

(1) Teacher Negative Control vs Teacher Warmth - This factor appears to represent the teacher who controls the classroom through the use of negative

Table 25

Correlations of Florida Climate and Control System (1970) with Pupil Growth Scores and Multiple Range Test Program Discriminations

	Multiple Range Test		Kindergarten[1]			Entering First[2]		
	Homo. Subset	F	Abs.	Skill	Conc.	Abs.	Skill	Conc.
1 - Teacher Negative Control	2	3.10**	-.10	-.06	-.05	,23	-.05	-.49
2 - Pupil Freedom vs Teacher Structured Activity	4	14.50**	-.33	-.12	.11	-.42	-.11	-.02
3 - Warm Climate	3	3.43**	.42	.74**	.30	.58	.09	-.19
4 - Pupil Negative Behavior	2	2.27*	-.31	-.03	-.01	.51	.16	.01
5 - Structured Teacher Behavior with Praise	3	12.83**	.54*	.60**	-.03	-.32	-.49	.27
6 - Pupil Conforming Behavior	1	.42	-.09	-.07	-.30	.10	-.09	-.40
7 - Effective Personal Communication	3	3.94**	.51*	.63**	.50*	.52	-.05	.25

[1] N = 19 classrooms; p.05 = .46; p.01 = .58

[2] N = 9 classrooms; p.05 = .66; p.01 = .80

* $p < .05$

** $p < .01$

Table 26

Correlations of Florida Climate and Control System (1970) with Nonentering First Grade Growth Scores[1]

	Group			Individual			Total		
	Abs.	Skill	Conc.	Abs.	Skill	Conc.	Abs.	Skill	Conc.
1 - Teacher Negative Control	.03	-.05	.00	.07	.05	.03	.06	.03	.02
2 - Pupil Freedom vs Teacher Structured Activity	.11	-.20	-.14	-.17	-.21	-.18	-.07	-.21	-.17
3 - Warm Climate	-.11	.49	.11	.16	.40	.17	.07	.43	.15
4 - Pupil Negative Behavior	-.17	.04	.10	.03	.27	.05	-.04	.22	.07
5 - Structured Teacher Behavior with Praise	-.37	.02	.20	-.31	.01	.21	-.36	.01	.21
6 - Pupil Conforming Behavior	-.55	.19	.14	-.21	.10	.06	-.36	.12	.09
7 - Effective Personal Communication	.34	.60*	.58*	.40	.52	.58*	.41	.54	.59*

[1]N = 12 classrooms; p.05 = .58; p.01 = .71

*$p < .05$

affect (Table 27). Pupils work under relatively close supervision, and respond with passive resistance. The factor discriminates significantly between programs but does not relate significantly to pupil growth. This seems a surprising result in terms of the concern for emotional climate which education holds.

Among the classrooms which stood high on the factor were several from big city schools which were undergoing change of administration in a context of neighborhood stress. The feeling of observers who revisited these same schools the third year of the project was that they had changed character dramatically and were again warm and friendly.

(2) Pupil Freedom vs Teacher Structured Activity - The central thread of the factor (Table 28) appears to be the contrast between various kinds of pupil freedom -- to choose an activity, a coworker, a group (and they work with little supervision), in contrast to activities which have been set by the teacher, and are closely supervised. There appears to be a strong parallel between this factor and Factor 1 of the 1969 FLAC, as well as the TPOR for both years.

The factor discriminates programs highly significantly, but does not relate to pupil growth. Again, this finding appears to support the comment made in connection with FLAC Factor 1, that the factors which are strongest in discriminating programs often do not relate to pupil growth.

(3) Warm Climate - This factor is made up principally of both teacher and pupil expression of positive affect in various ways (Table 29). These items are supplemented by the teacher listening carefully to the child, agreeing with the child, and supervising closely, but it is largely pupil behavior. The factor separates programs into three subgroups and discriminates significantly. It correlates significantly with kindergarten Skill, and at a lower level with kindergarten and entering first Abstract, and all three Skill measures for

Table 27

Florida Climate and Control System

Factor 1 - Teacher Negative Control vs Teacher Warmth

Item	Loading	Description
7	.77	T gives orders, commands
9	.77	T uses sharp tone
15	.79	T glares, frowns
21	.60	P passive resistance
25	.45	P works with much supervision
30	.45	P shows shame, fear, humility
36	.84	T uses threatening tone
37	.72	T criticizes
50	.78	T frowns
51	.63	T points, shakes finger
26	-.48	P works with little supervision
54	-.53	T gives individual attention
55	-.65	T sympathetic, warm (N.V.)

Eigenvalue = 7.92

Table 28

Florida Climate and Control System

Factor 2 - Pupil Freedom vs Teacher Structured Activity

Item	Loading	Description
17	.80	P freedom to choose activity
26	.57	P works with little supervision
31	.81	P freedom to group
35	.76	P free time
38	.47	P commands or demands
49	.41	P enthusiastic, happy (V)
60	.63	P chooses another
62	.48	P pats, hugs another
63	.42	P enthusiastic, happy (N.V.)
1	-.67	T central
3	-.45	T attends simultaneous activities
10	-.49	T supervises pupil closely
18	-.42	P seatwork w/o T
25	-.58	P works with much supervision
33	-.64	P time structured with T
43	-.45	T draws all into group

Eigenvalue = 7.11

Table 29

Florida Climate and Control System

Factor 3 - Warm Climate

Item	Loading	Description
10	.41	T supervises p closely
29	.59	P shows pride
41	.56	T agrees with child
44	.46	T is enthusiastic, congenial
46	.67	P sounds friendly
47	.65	P agrees with another
48	.51	P offers to share, cooperate
49	.49	P enthusiastic, happy (V)
56	.71	T listens carefully to child
58	.72	P helpful, shares
61	.59	P smiles, laughs with another
63	.46	P enthusiastic, happy (N.V.)

Eigenvalue = 5.26

Table 30

Florida Climate and Control System

Factor 4 - Pupil Negative Behavior

Item	Loading	Description
4	.55	T directs, with reason
14	.77	T tolerates deviant behavior
19	.43	P speaks aloud w/o permission
20	.70	P engages in out-of-bounds behavior
38	.48	P commands or demands
39	.72	P finds fault
40	.50	T says "thank you," etc.
52	.51	P picks at child
53	.57	P hits
57	.56	T touches, pats, hugs child

Eigenvalue = 4.98

nonentering first. Only one of the correlations is significant, but the pattern appears to be relatively consistent.

(4) Pupil Negative Behavior - A number of kinds of pupil negative affect expression and negative behavior appear in the factor (Table 30). Both the deviant behavior tolerated by the teacher (item 14), and the out-of-bounds behavior of the pupils (item 20), are defined in terms of standards which the teacher attempts to maintain in the classroom, rather than in terms of observer standards. The teacher would apparently like the classroom to run differently than it does, but "puts on a good face." The factor creates two subgroups, and discriminates between programs but does not relate to pupil growth. Some of the same classrooms described in Factor 1 were also high on this one.

(5) Structured Teacher Behavior with Praise - The title reflects the strongest loadings, with additional structure in the teacher question or statement of a behavior rule (Table 31). The negative pole of the factor suggests a gentle sort of teacher control and related pupil behaviors, but seems too weak to warrant naming in the factor. The factor discriminates highly significantly between programs, creating three major subgroups. It also relates significantly positively with kindergarten Abstract and Skill growth. However, although not significant, there are negative correlations in the .30's for Abstract growth in the nonentering first grade, and in the .30's and .40's for the entering first grade for Abstract and Skill. This pattern of correlations suggest the possibility that this method of control on the teacher's part is functional for the growth of young children, but as they become older it is no longer supportive of Abstract growth. The failure of these correlations to reach significance makes any interpretation doubtful, even though there is considerable consistency in the correlations. Alternatively, these may be small sample variations.

Table 31

Florida Climate and Control System

Factor 5 - Structured Teacher Behavior with Praise

Item	Loading	Description
11	.51	T questions, states behavior rule
12	.57	T praises (control)
18	.41	P seatwork w/o T
32	.68	Materials structure T behavior
42	.71	T praises (affect)
8	-.40	T suggests
28	-.45	P seeks reassurance, support
48	-.41	P offers to share, coop.

Eigenvalue = 4.11

Table 32

Florida Climate and Control System

Factor 6 - Pupil Conforming Behavior

Item	Loading	Description
16	.57	T touches, pats
22	.64	P obeys directions
23	.49	P asks permission
24	.47	P follows routine w/o reminder
28	.42	P seeks reassurance, support
45	.48	P says "thank you," etc.

Eigenvalue = 2.97

(6) Pupil Conforming Behavior - The items seem generally to reflect a variety of conforming behaviors on the part of pupils (Table 32). The factor does not discriminate between programs; rather the F suggests that variability within programs is somewhat larger than that between programs. The factor does not correlate significantly with pupil growth, but the negative correlation with Group Abstract for nonentering first grade pupils approaches significance.

(7) Effective Personal Communication - The thread that runs through this factor appears to be one of real personal involvement between teacher and pupils (Table 33). Although the negative pole has only one item on it and consequently is not named, the impersonality of the teacher structuring pupils into a setting in which blackboard or audio-visual equipment serves as a teacher surrogate supports the interpretation. The factor discriminates significantly between programs, creating three subgroups. It correlates strongly and positively with pupil growth -- the most consistently of any factor in the instrument. Although some correlations are significant and others are not, with only three exceptions the correlations are relatively strong with measures of pupil growth across three subgroups of pupils. The factor appears to be a surprisingly strong one to have so few items in it. Probably it is symptomatic of a larger complex so that these items represent only a portion of the effective communication.

All in all, FLACCS appears to be sensitive to differences in programs, and probably even to periods of stress in schools; six of seven factors discriminated programs significantly, five beyond the one percent level. Some factors describe behavior graphically (Factor 1) and others which seem incomplete appear to tap subtle but apparently powerful aspects of teacher-pupil interaction (Factor 7).

Table 33

Florida Climate and Control System

Factor 7 - Effective, Personal Communication

Item	Loading	Description
13	.68	T nods, smiles, for control
43	.41	T draws all into group
44	.45	T is enthusiastic, congenial
63	.42	P enthusiastic, happy (N.V.)
2	-.46	T uses blackboard, A/V equipment

Eigenvalue = 3.02

This instrument continues a pattern cited earlier, in which the factors which discriminate programs most strongly are often not the ones that relate to pupil growth. Factors 2 and 5 discriminate programs most strongly, and both represent aspects of the structure of the classroom -- the relative balance of teacher structuring vs pupil freedom of choice, and the teacher structuring and controlling pupil behavior by the use of praise. Yet neither related consistently to pupil growth through all three subgroups. In contrast, the two factors representing supportive affect, Factors 3 and 7, do relate to measures of pupil growth across all three pupil groups -- not always significantly, but consistently and even highly. The implication, speculative to be sure, seems to be that the more objective, external, mechanical arrangements of the classroom are less important than the personal communication of warmth and support.

Reciprocal Category System - The factor structure from the 1970 data was selected as the one on which the 1969 and 1970 data would be examined. The details of program discrimination are presented in Appendix D, with a summary in Table 34. The correlations of the factors with measures of pupil growth are shown in Tables 35 and 36. The various measures are defined in Appendix E.

(1) Drill With Teacher Acceptance and Pupil Initiation vs Teacher and Pupil Initiation. The positive pole of the factor appears to describe a setting in which interaction between teacher and pupils occurs in relatively rapid-fire fashion (Table 37). It does not appear to be a typical drill session, however, in the sense that the teacher talks more, takes time to praise pupils, to accept answers, and to do these things at some length. The only pupil talk which occurs, however, follows teacher talk, much of it after a teacher question. The fact that pupils do occasionally initiate also seems to imply that the setting is not as tightly structured or rapidly occurring as the typical drill session. The negative pole of the factor is not a strong one, but reflects initiation by both

Table 34

Reciprocal Category System
Multiple Range Tests of Program Discrimination

Factor	1969[1] Homo. Subsets	1969[1] F	1970[2] Homo. Subsets	1970[2] F
1 - Drill with Teacher Acceptance and Pupil Initiation vs Teacher and Pupil Initiation	3	5.12**	2	5.39**
2 - Varied Pupil Directed Interaction	2	2.58*	3	4.06**
3 - Warm, Nonevaluative Teaching vs Teacher Correction	1	1.45	2	2.15
4 - Teacher Amplification in Extended Talk	1	.73	1	1.07
5 - Pupil Talk	1	.33	1	1.18
6 - Teacher Initiation with Pupil Interruption vs Teacher Question	2	3.22**	3	5.10**
7 - Teacher Direction vs Pupil Initiation	1	1.30	4	4.97**
8 - Supportive Pupil Talk	2	1.58	2	2.05

[1] N = 70

[2] N = 65

* $p < .05$

** $p < .01$

Table 35

Correlations of Reciprocal Category System With
Pupil Growth Factors

Factor	Kindergarten					First Grade[4]		Entering First[5]		
	1969		1970			1969		1970		
	Abs.[1]	Conc.[2]	Abs.	Skill	Conc.[3]	Abs.	Conc.	Abs.	Skill	Conc.
1. Drill with Teacher Acceptance and Pupil Initiation vs Teacher and Pupil Initiation	.09	.13	.25	.08	-.19	-.17	.12	.09	.15	.06
2. Varied Pupil Directed Interaction	.28	-.21	-.05	.19	.17	.43	.00	.01	.30	-.18
3. Warm, Nonevaluative Teaching vs Teacher Correction	-.17	-.33	-.06	-.12	.04	-.07	.07	-.59	.02	.61
4. Teacher Amplification in Extended Talk	.18	.14	.01	-.23	-.23	.60**	-.16	-.23	.00	.25
5. Pupil Talk	-.22	-.20	.35	.39	.29	-.59**	.11	.37	.71*	-.21
6. Teacher Initiation with Pupil Interruption vs Teacher Question	-.17	-.02	-.14	-.21	.11	.42	.05	-.30	-.03	.72*
7. Teacher Direction vs Pupil Initiation	.24	.29	.11	-.17	-.24	.16	-.22	-.17	-.16	.46
8. Supportive Pupil Talk	.11	-.22	-.04	-.09	.00	.19	-.07	-.10	-.54	.30

[1] N = 23 classrooms; p.05 = .41
[2] N = 33 classrooms; p.05 = .34
[3] N = 19 classrooms; p.05 = .46
[4] N = 20 classrooms; p.05 = .44 p.01 = .56
[5] N = 9 classrooms; p.05 = .66 p.01 = .80
*p < .05
**P < .01

DOCUMENT RESUME

ED 113 289 SP 009 382

AUTHOR Pomeroy, Edward C.
TITLE What's Going on in Teacher Education--The View from Washington.
PUB DATE 14 Aug 75
NOTE 29p.; Speech presented to the Leadership Training Institute of the American Association of Colleges for Teacher Education (Annapolis, Maryland, August 14, 1975)

EDRS PRICE MF-$0.76 HC-$1.95 Plus Postage
DESCRIPTORS *Accreditation (Institutions); *Cooperative Planning; Educational Change; Educational Innovation; Federal Government; *Governance; *Inservice Teacher Education; Interagency Cooperation; Interinstitutional Cooperation; Professional Continuing Education; State Government; *Teacher Education; Trend Analysis
IDENTIFIERS *American Association Colleges Teacher Education

ABSTRACT

Higher education, along with its national voice, the American Association of Colleges for Teacher Education (AACTE), has reached a critical point in teacher education and must deal with a variety of important issues if collegiate-based teacher education is to continue. The major challenge that higher education faces is that of governance. Many constituencies in the education community, but particularly teacher organizations, are voicing legitimate interests in professional preparation--a matter which until recently was completely under the influence of college-based educators. Accreditation is the second major issue to which higher education and AACTE must respond. Accreditation has developed as a means of quality control in teacher education largely through the efforts of member institutions of AACTE. Currently, however, questions concerning who will set standards and what will be judged are increasing. A third major concern is collaboration. The sharing of governance in teacher education is an idea whose time has come, and collegiate institutions must ensure they are involved. Government relations is another important issue, and higher education must retain its place in teacher education by taking effective action at both state and federal levels to strengthen its power base. AACTE is responding forcefully at both levels. A fifth area of concern is continuing professional development, including supply and demand and governance of inservice education. (PB)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED113289

WHAT'S GOING ON IN TEACHER EDUCATION--

THE VIEW FROM WASHINGTON

Edward C. Pomeroy

Executive Director, AACTE

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

A speech presented to

The Leadership Training Institute

of the

American Association of Colleges for Teacher Education

Annapolis, Maryland

August 14, 1975

SP009 382

ANNAPOLIS SPEECH--Edward C. Pomeroy August 14, 1975

WHAT'S GOING ON IN TEACHER EDUCATION--THE VIEW FROM WASHINGTON

We have all heard the critics who are saying there's nothing going on in teacher education right now; but fundamental issues are being resolved that will chart the course for the next decade and beyond. The problems you are experiencing in your local and regional areas are affected by the views of teachers, the public, legislators, the state of the economy, and all the other factors that interact to influence changes in our field. Your Association finds itself in the middle, working to keep its member institutions in the mainstream of this debate. And I have to tell you, the view from the middle presents a composite picture of our profession which can be enlightening--even startling.

. For example: Nolan Estes, the influential general superintendent of the Dallas public schools, proposes that teacher education should be taken out of higher education and put into the schools, where he feels it belongs. His recommendation to revert backward to an apprenticeship system has been received all too calmly by all of us in the teacher education community.

. California and Oregon have established teacher-dominated Commissions on Teacher Preparation and Licensing to evaluate college and university teacher

preparation. These commissions also certify teachers, and are presently formulating performance standards which are sure to influence or set nation-wide performance criteria. The members of these commissions are mainly teachers--with little or no higher education involvement.

. In Washington, the U.S. Commissioner of Education sets criteria for nationally recognizing accrediting agencies as reliable authorities on the quality of collegiate training. The 1952 criteria have been revised twice--in 1969 and 1974. In January 1975, the federal advisory board gave the National Council for Accreditation of Teacher Education (NCATE) only one-year approval rather than the standard four years, principally because of its level of financial support. Is federal control of accreditation upon us?

These incidents can no longer be seen as isolated, scattered, unrelated. Each one illustrates the critical point higher education has reached in teacher education, and how we deal with these issues today will determine if collegiate-based teacher education prospers five years from now--or even survives.

The crucial question is: Who's in charge? And more specifically: Who's going to be in charge of education personnel development? For a long time, higher education was in the driver's seat and, through its national voice--AACTE, called the tune on accreditation standards, certification, program design, curriculum, and a host other concerns. Now, the voice of all the other partners in the

education enterprise rise in disharmonious chorus--the federal government state legislatures, education commissions, state and local education agencies, organized teachers, citizens, even student teachers are each demanding their say--in some cases, majority control. These agencies do have a stake in the process, and there ought to be ways for them to affect what goes on--in proportion to their expertise. But in practice, partnership can prove a cantankerous, difficult beast. We must find ways to harness it before it distracts us all from the ultimate goal--better education. In the meantime--let's face it--we're in the midst of a power struggle. Is higher education prepared to take forceful action--to maintain its initiative? The alternative is to resign ourselves to a service role, performing only when called upon.

The members of AACTE have not retreated from the fray; this meeting and your participation testify to that fact. Higher education has the knowledge and expertise to continue to lead in this vital enterprise. But we can no longer take our position of leadership for granted. We must decide upon unified goals, design plans of action together, and follow through--together. Local and state education agencies know where they are headed, the federal government certainly has power, and the organized profession makes no bones about its goals and the political clout it wields. Unity is the key, for, as Howard K. Smith put it on the ABC

News (in another context): "We've got to deal with the real issues, or we will lose control of the thing we're talking about controlling."

In the next few minutes, let's look at some of the major issues we all face together: governance and accreditation, collaboration, state and federal relations, continuing professional development, and innovative program approaches. Along the way, we'll examine how AACTE is responding to these issues. Then, I'll make some personal suggestions on what we can do to insure a major role in the educational enterprise for higher education.

GOVERNANCE IS OUR BIGGEST CHALLENGE...

The central challenge we face today is the governance of our profession. Governance implies a power structure, an answer to who legitimately decides the goals, methods, and standards of any social group. In teacher education, everything from selection of candidates to final recertification was firmly under the influence of the professional college-based educators--until the late 1960's. Suddenly we are discovering that the traditional hierarchies and roles are no longer acceptable--or for that matter, workable.

Many constituencies in the education community are voicing legitimate interests in professional preparation, but the boldest challenge to higher education's traditional control over teacher education comes from teacher

organizations. After writing model legislation, NEA is using considerable resources to lobby for creation of state Commissions on Teacher Standards and Licensure. These commissions would set and administer standards for accrediting institutions and licensing teachers. They would also define ethics and performance criteria and evaluate teachers. The need for such standards and criteria is not the issue--who sets and administers them is. The original NEA model act called for a 13-member commission, with only two from higher education, the rest being licensed teachers or administrators. Lately, NEA has made efforts to alter this position, asking for only a majority. Still this approach does not adequately recognize the need for higher education's expertise.

The immediacy of this challenge maynnot be pressing to those who work in states where traditional relationships between teacher groups and teacher educators still prevail. Yet 27 states have already established standards commissions. In two of these states--Oregon and California--the commissions have all the absolute powers just described; the rest have advisory powers. And the NEA has announced its intention to see these commissions established by law in every state by the end of this decade.

Another problem we face is that universities may be losing control over field experiences. In the Journal of Teacher Education this Fall, Don Kachur and

Duaine Lang present evidence that NEA and AFT locals are negotiating with school boards to control clinical experiences. I quote: "In no instance was there any indication that the university was a third party signatory to the agreement." What will be the consequences for university programs when external decisions determine how many and which student teachers can be placed where, and how much compensation they must pay to cooperating teachers? Kachur and Lang state: "Colleges and universities are at a truly critical point of decision. If (we) want to maintain control of clinical experience programs and still use the public schools" they suggest very few options, the best of which is to "take the initative in assuming negotiations parity with school boards and teacher associations." The worst alternative is to "abandon the responsibility for clinical preparation of teachers." It is obvious which path we must take.

Other interested power groups are moving to share in, or take control of, professional preparation.

A July news release from NEA proudly states that in California, education students have won the right to participate in evaluating the 62 colleges and universities that prepare teachers, and student NEA members in Iowa are "deeply involved in trying to get their legislature to establish a Professional Standards Board."

Michigan is mandating 10 percent reductions in enrollment acrolss the board, and the Illinois state superintendent is calling for cutbacks in enrollments and so-called marginal programs. In all 50 states, state boards of education have studied CBTE approaches; and 32 states have either adopted some form of mandatory CBTE standards or are encouraging CBTE program approaches as a basis for certifying school personnel. Some states are unilaterally establishing non-negotiable time lines and other requirements--without the financial assistance needed for sound program transitions.

Another challenge is recurring within the university itself--helped by some unlikely allies. In July hearings to reauthorize Teacher Corps for three years, Senator Claiborne Pell of Rhode Island brought up the old--rather tired--attack on teacher education. He said that we "are teaching method rather than substance," that today's teacher "has only a limited ability to discuss...subject matter." His solution would be to rechannel Education Professions Development Act (EPDA) funds from teacher education into teaching subject matter. For many years, we have struggled to build mutual respect and cooperation with the arts and sciences faculties, but it appears we're back to the same old arguments. And yet, the same old answers won't do. It's time to build a new program for the preparation of teachers that is defensible.

The examples I've cited on the challenge of governance are not isolated instances, they are national in character, and they require organized national responses.

ACCREDITATION IS A SECOND BIG CHALLENGE...

Accreditation has developed as a major means of quality control in teacher education, largely through the efforts of member institutions of AACTE. Today, challenges to accreditation are growing. Who will set the standards, and will they be voluntary or mandated? Will institutions or programs be judged? Finally, will accreditation be used to stimulate improvement, as it is now, or to indicate a level of institutional acceptability?

As we all know, the balance of representation on the NCATE Council and Coordinating Board was realigned in 1974 after considerable negotiation. This gave the classroom teachers an equal number of votes with AACTE and opened up a new category of Associate memberships. More and more elementary and secondary practitioners are serving on visiting teams and evaluating boards. The impact of the parity move is only now being sensed, and considering the complexity of the evaluation process, it may be too early to judge its results. Not too unexpectedly, teachers make both good and bad members of teams. What seems to

be needed in the future is more adequate training for all evaluators in the NCATE process.

Satisfying the federal criterion for representation of the community of education interests was only one factor in this NCATE realignment. In 1968, U.S. Commissioner of Education Harold Howe declared that "the development and maintenance of educational standards in the responsibility of non-governmental, voluntary accrediting associations." Nevertheless, the mere existence of a federally approved list of accrediting agencies and the criteria for making the list implies a not so subtle control. Congress relies upon accreditation to establish institutional eligibility for federal funds. And now, a study by Harold Orans and George Arnstein recommends that USOE take independent steps to assess quality for the purposes of federal funding. The desire for consumer protection seems to be moving us toward federal control. Yet the record of federal regulatory agencies raises questions about how well they protect consumers.

Whatever we think of its value and scope, national accreditation is by no means universal. According to an ongoing study by David Clark and Egon Guba, there are 1,386 teacher preparing institutions which are accredited by state agencies and regional accrediting groups, but only 543 are accredited by NCATE.

AACTE has responded to the governance issue in many ways, and much more can be done. In the area of accreditation, higher education maintains a voice on the NCATE Council through its eight AACTE representatives. It is important that those we elect each year recognize they represent many people and institutions besides themselves. Through them we have the opportunity to communicate policy positions. For instance, what position shall we take regarding NCATE's interest in accrediting programs rather than institutions? How much do we resist federal efforts to intrude upon voluntary and state accreditation? Already AACTE has protested a plan to provide a federally funded "credential" for preschool workers, by withdrawing membership from the Child Development Associates Consortium, and by publicizing reasons for taking such drastic actions.

It is in arenas such as this that a national organization can best speak for the interests of teacher educators everywhere.

When your Association established its Commission on Education for the Profession of Teaching (CEPT) a year ago, it created a potentially major force for defining positions on governance and the direction this profession should take. After much input from teacher education, the work of the Commission will be the heart of next February's Annual Meeting. You and your colleagues there

will determine what will happen to that report. Will it go the way of so many other such reports, which are discussed but never acted on? It is vital that the member institutions of AACTE formulate specific policies on the issues raised by CEPT. Then they must speak out with one voice in the centers of power through their national AACTE. Such unified action is necessary to the redesigning of our profession, especially in the face ofthe unified efforts of the other powerful and determined vested interests.

COLLABORATION IS A THIRD CRITICAL CONCERN...

What the various interests in teacher education have inccommon, hopefully, is a laudable concern for improving the quality of education in our society. But higher education, government, or the public schools alone cannot carry on teacher education--much less improve it. All the partners must work together.

. For example: the Teacher Corps promotes collaboration as a part of its fundamental design, first by making the agencies plan together in submitting proposals, and second, by providing financial rewards to all parties. (By the way, AACTE has just recognized the accomplishments of Teacher Corps by featuring its tenth anniversary in the summer Journal.)

. Independent collaborative arrangements for designing and implementing new field-based programs are proceeding in many of your own localities. The Temple University Portal School Project is an outstanding example. There, the resources of many separate university programs have been combined to impact on four inner-city schools. The universityaand public schools make jointaappointments. Representatives from the university, schools, union, community, and student body work together on advisory boards, reaching agreement by mutual consent. In 1972, AACTE recognized this cooperative project with the Distinguished Achievement Award.

. Our Association has recognized the importance of collaboration in its own operation, in its support of NCATE and the ERIC Clearinghouse on Teacher Education.

No one can promise that collaboration will be easy, but the early experiences of Teacher Corps and others mean that we don't have to reinvent the wheel.

At our last Annual Meeting Roger Heyns, president of the American Council on Education, warned us:

> "The basic scheme (of teacher education) is not so much in question, but rather the sense of partnership that is necessary to make it go has been jeopardized by the intrusion of a power struggle into this complex educational process...Where the professionals begin to quarrel among themselves about who is

> going to control an activity of vital interest, the society has a way of settling it, not by choosing among the warring factions, but by assigning to one of its own instrumentalities the effective control. This inevitably means the intrusion of laymen into areas where professional competence is really required; and it is ironic that this is usually the consequence of the failure of professionals to solve the problem themselves."

Those who stand in opposition to sharing control of teacher education seem as likely to succeed as the boy with his finger in the dike. He was a hero, but the dike broke anyway. It is too late to stand aside and cry "no." By whatever name we call it--parity, collaboration, consortia, partnerships--the sharing of governance in teacher education is a notion whose time has come. The only question is, after the furor is over, will higher education be one of the partners?

GOVERNMENT RELATIONS ARE A FOURTH CRITICAL ISSUE...

The political struggle today over powers and roles will hopefully give way to more cooperative efforts. But first it is necessary for higher education to retain its important place in teacher education by strengthening its power base. There are two arenas for action: state and federal. AACTE is responding forcefully in both.

The answer to professional practices legislation is effective action by state Associations of Colleges for Teacher Education. Because your Headquarters Office was in constant touch with NEA, you received early warning of its model legislation plans in 1972. Association leaders also felt the need to respond to conditions in their states. The logical outgrowth was the formation of state AACTE units. Your Board of Directors fostered these units through creation of a State Unit Task Force, discussions at Annual Meetings, and LTI's for state leaders such as this one. They also made it possible for staff to devote time and energy to assisting state leaders.

Success is already apparent. Today, 29 state units have formed, and more are on the way. Through much hard work on the local level, many state units have been actively representing teacher education in their state capitols. For the most recent achievement, congratulations are in order for the Illinois ACTE, which has just defeated a bill to give even greater power to teachers on the State Certification Board. AACTE people worked months buttonholing their state senators and staff, talking with the state superintendent, and getting newspaper support.

Now in response to expressed needs of the members, your national AACTE has quickly adjusted its limited resources to make federal and state government

relations its first priority. Our newly reconstituted Commission on Governmental Relations has held its first meeting, chaired by your President-elect, Ted Cyphert of Ohio State. The seven members will develop and recommend policies and programs. Already AACTE has distributed four monthly issues of a newsletter, Legislative Briefs, which alternates in covering significant events in state problems and federal legislation.

Through these and other dissemination capabilities of your national office, an exchange of information enables state units to learn from each other, react effectively to new situations, and alter undesirable conditions.

Your staff is monitoring and reporting the status of federal legislation of vital interest to you. It is important for you to react to bills and amendments, so that your views will be represented in the halls of Congess and government agencies. And AACTE is listened to. In July, for example, Robert Egbert, from the University of Nebraska--Lincoln, testified for AACTE in support of NIE before the House education subcommittee. Significantly, several groups worked together with us to develop a unified position on NIE: the American Educational Research Association (AERA), the Council for Educational Development and Research (CEDaR), and the Land-Grant Deans.

. Through your National Office, you have a chance to influence other Washington-based organizations who develop state and

federal legislation. For instance, when the American Council on Education was asked to testify on proposed legislation recently, they asked AACTE to write the section on EPDA to represent your views.

.Your staff is your listening post--an early warning system for what the federal government, NCATE, NEA, and other groups are doing, thinkiing, and planning.

.Not only does Congress turn to AACTE for advice and testimony on educational policy, but USOE and the National Advisory Council on EPDA view our organization as a primary national network for dissemination news and ideas on teacher education.

Thus, AACTE's presence in Washington mears that many good things happen for teacher education--and some potentially bad ones don't.

What we're doing in governmental activities is only a scratch on the surface of what needs to be done. We must find the resources to dadvance these efforts.

CONTINUING PROFESSIONAL DEVELOPMENT IS ANOTHER BIG CONCERN...

Now, let's take a look at the issue of continuing professional development. Continuing teacher education has long been needed, but other interested parties have not taken an interest until lately. Many factors are at work here. However, we only have time to look at two: supply and demand, and governance.

Supply and Demand

Teacher education is a profession which must constantly respond to changing conditions. Now we're in the midst of another period requiring adjustments. For in the past several years, as the publicly felt need for additional teachers has decreased, the importance of enhancing programs for continuing professional development is apparent. All AACTE institutions are also faced with the very real question of how to best utilize their rich resources in better serving the schools.

Here are some necessary steps to deal with the present situation which many of you are now examining.

1. We must demand, through state ACTE's, better financing for teacher education. Recent data from the Carnegie Commission study and the National Center for Higher Education Management

Systems verifies what we have long believe to be true--namely that cost per FTE in education programs is significantly lower than in other professional sequences. If you are not already working for better financing, I hope you will soon make this a top priority.

2. We must eliminate nonproductive programs and courses.

3. We must shift our emphasis to areas of documented shortages, and advise more students into these areas. Dean Corrigan suggests that we prepare more specialized teachers in industrial and vocational education, urban, early childhood, and special education. Others say we should design more certificate programs for counselors, administrators, and paraprofessionals. One move that may help--AACTE is considering support for an AFT-sponsored bill to tie all early childhood legislation to public schools--and not to commercial day-care centers, or to new groups created to take advantage of the new legislation.

4. We must continue to revise our admission policies. The teaching profession should be more representative of our population. As believers in equal opportunity and multiculturalism, we must practice what we preach.

5. We must prepare instructional personnel for nontraditional, nonschool settings. Leo Shapiro tells us that there were almost 49 million people providing vocational and professional training in nonschool settings in 1970. Compare that with only two and a half million in school teaching, and there is an obvious market for our "products." Let's tell our students these job opportunities exist, and let's justify our programs on the basis of a much wider need.

6. We must <u>demonstrate</u> cost-effectiveness and societal values of our programs.

7. Finally, we must improve our inservice or continuing education programs. The demand is certainly there, and colleges of education have the vital resources--provided imaginative planning takes place. But if we proceed at our present pace, teacher organizations and local school districts will soon outpoint us in designing and controlling inservice programs.

GOVERNANCE OF INSERVICE

The present move toward continuing professional development is one response to the supply/demand situation. But it is also evidence of teachers

and schools moving to control their own programs. Three developments highlight the problem colleges face:

. Recently, the states of Pennsylvania, Colorado and Maryland have sanctioned the right of local school districts to award academic credit for inservice workshops. Montgomery County, Maryland has set up its own minicollege of education, unrelated to graduate programs at nearby colleges and universities.

. NEA local affiliates are working in several states to establish more such programs, and

. Legislation is now being drafted by Senator Mondale to fund a limited number of U.S. teacher centers to be operated by school boards. Then these boards might contract with commercial or other agencies to provide inservice education. Colleges could be involved--but not necessarily.

AACTE has provided national leadership to counteract this move. Your Headquarters Office was instrumental inccalling a June meeting of all of interested parties and the Senator's aides. Your AACTE representative argued strongly for legislation that would provide for collegiate involvement and therefore insure that it is professionally sound as well as politically viable. The result is that AACTE is now acting as the catalyst to synthesize five

association positions into language for an appropriate piece of legislation, on teacher centers. We will continue to monitor and work with this situation closely.

What AACTE must recognize is the exciting possibilities inherent in on-site continuing education for expanding the scope and influence of higher education's expertise. In the 1975 Yearbook of the National Society for the Study of Education (NSSE), Part 2, Morris Cogan tells us that "professors are needed in the school sites to offer instruction in the relationships of theory, research, and practice." Without this, "teachers may adopt a popular practice and continue in it without ever knowing whether their procedures are effective or whether their instruction is improved or damaged."

I have just returned from the ICET Assembly in Berlin, where continuing education was the theme of the conference. In one session, two American teacher educators displayed a long list of their university's newest in-service courses. There was no indication of consultation with teachers or school boards--no evidence of needs assessment. The faculty had simply decided what it wanted to do and handed the list down from on high. I felt compelled to indicate that this was not representative of American teacher education, but honestly I'm not sure that's true.

In 1968, Don Davies called the continuing education of experienced teachers the "ghetto" of American education. It remains so today. The present hodgepodge of institutes, workshops, after-school and summer programs grew much like Topsy. Participation has been more often coerced than voluntary, more to climb the salary and promotion scales or meet imposed advanced degree requirements than to upgrade personal skills and the profession. While many industries invest as much as 10 percent of their budget on research and staff training to improve their employees, education spends less than one percent for re-educating teachers.

What's missing from inservice education, say Roy Edelfelt and Gordon Lawrence, is a fundamental framwork such as preservice has. There is no clear concept of inservice purpose, no basic commitments by university or school district; there are weak or nonexistent state approval programs, and skimpy accreditation devices.

Higher education institutions must lead in developing that framework. Of course, teachers know what is needed to update specific teacher skills, since experience teaches them the weak spots in their own preparation. However, knowing what they need and knowing how to design and deliver programs for pro-

fessional upgrading are separate matters. Analyzing needs should be the responsibility of several parties--teachers, school boards, and administrators--aided by teacher educators. The responsibility for designing and delivering continuing education programs belongs to teacher educators, working cooperatively with others.

Some would argue that the struggle for the governance of on-site inservice education is over. It is my position that this issue is still up for grabs. Higher education has too many resources and too much expertise to be counted out. If we believe this, we must fight for our role. This does not mean we oppose collaboration. But collaboration works best when each party comes with well thought-out positions and is thus able to negotiate solutions for a position of strength. AACTE is the logical choice to negotiate for collegiate-based teacher education, since we are its largest and most representative body. In order to direct higher education's involvement in continuing personnel development and to counteract the oversupply effects, we must develop unified policy and programs. Here is where our developing Management Information System (MINFO) can provide interpretative data so vital to rational planning. We can also improve our information and Clearinghouse capabilities to support both local and national efforts. Particularly, we can

urge that models be devised, implemented, and evaluated. Our institutions and AACTE must find the resources to develop the reforms we need to meet the challenges ahead.

OTHER PROGRAM APPROACHES PROVIDE DYNAMIC RESPONSES...

The cries for relevance and improved quality are being met--but not enough and not everywhere. Higher education needs to do more in the area of needs assessment, program design and delivery, research, and evaluation. We as teacher educators have a great history of responding to changing times, but we must continue to nourish our capacity to change.

There's no lack of program approaches needing investigation and experimentation. And fostering the investigation of alternative program approaches is the kind of thing AACTE is equipped to do well. Our Distinguished Achievement Awards program is only one example of ways we have tried to encourage program reform.

Our continuing emphasis on multicultural education is a direct outgrowth of expressed needs of the membership to develop teachers for different linguistic, racial, and ethnic needs. A newly reorganized Commission on Multicultural Education will define needs and establish priorities. In addition,

our government relations staff is monitoring the development of bilingual legislation on the Hill. The new Ethnic Heritage Project is an information gathering center which will hopefully become a major resource for our members and the whole profession, just as the ERIC Clearinghouse is. Similarly, the AACTE/PBTE Project is a professional resource. In all these endeavors, AACTE does not advocate particular programs; it does point out new directions, interpret implications, and disseminate both the prospects and the problems involved. Indeed we would be remiss if we were not involved; for if this Association does not guide these projects, other interests will! In this way, higher education, through AACTE, has a reasoned influence on the direction such movements take.

And it is vital to recognize that most of these projects do not use member dollars, since they are funded by outside sources. In fact, for every one dollar member institutions invest in the Association, they--and the whole profession--receive dividends of three dollars in program service. For instance: federal monies made it possible for AACTE to sponsor the writing of our book called Multicultural Education through Competency-based Teacher Education and distribute a remarkable 27,000 copies.

SOME PROJECTIONS FOR THE FUTURE

What we have examined here this morning in the areas of governance, continuing education, and government relations is hardly the whole story. We face many other challenges, but these three seem central to higher education's position in teacher education.

Simply to talk and not to act is unthinkable. Major issues call for strong responses. First, we must strengthen our power base. Our institutions must demand their place in teacher education--on the state level through state ACTE's and on the federal level thru your national AACTE.

What is happening on the local and state levels is vital, and the Association is increasing its capacity to act strongly in those arenas. But at the same time, higher education's interests in teacher education need representation in the national forum. One major function of any Association's national office is to speak for its members, to represent their views wherever collective strength and wisdom can have an impact--to do what individual institutions are not equipped to do. AACTE is the only association of higher education institutions that cares exclusively about teacher education. Without a national AACTE, there would be no voice for your interests. No other would speak with such consistent effect. What your Association does in Washington

has made a difference. What must we do next?

. We must test our ability to collaborate with the other partners in the education enterprise, on a true parity basis.

. We must strengthen our government relations. Let us move out into the public arenas with unified positions on governance, inservice, and other issues.

. Let us lead in negotiations, on the local and national levels.

. Let us demonstrate our capacity to develop new programs.

. Let us decide whether to institutionalize the inservice teacher center of the HETFIRE report, and the professional positions of the CEPT report.

. But especially, let us guard our mutual interests together

Teacher education is a diverse and complicated enterprise. To meet new challenges, our priorities must be subject to change. What we need is coherent, unified policy--unified policy without loss of diversity, and with concern for local needs. AACTE's past success tells us we can be effective in the future. Together we can assure this. Let's begin now!